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COLLECTION

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CATALOG OF CULTURES
SIXTH EDITION
1958

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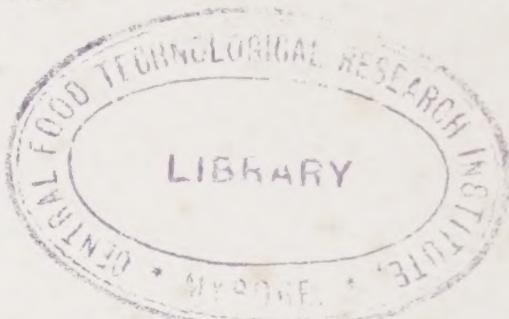
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INTRODUCTION TO THE SIXTH EDITION

Purpose and History of the Collection

The American Type Culture Collection is an organization developed from a "Committee on Maintenance of a Collection of Type Cultures of Bacteria," appointed under the auspices of the Divisions of Medical Sciences and of Biology and Agriculture of the National Research Council, in October 1924. Its purpose was to preserve cultures of microorganisms that have historic and scientific interest and to provide a center for obtaining cultures needed in education and research.

The nucleus of the Collection was a "bacteriological collection and bureau for the distribution of bacterial cultures" that was established by C. -E. A. Winslow at the American Museum of Natural History, in New York, in 1911. The initial support of the new organization was provided by a grant of \$24,000 from the General Education Board of the Rockefeller Foundation. The Collection came into physical being in 1925 at the John McCormick Institute for Infectious Diseases in Chicago, to which the residue of the Winslow collection was transferred after a temporary sojourn at the Army Medical Museum in Washington.

Contributions from other special culture collections were received either by outright inclusion or by arrangement to supply specimens on request. Chief among these were the Charles Thom collection of molds in the United States Department of Agriculture, the F. W. Tanner collection of yeasts from the University of Illinois, actinomycetes from the S. A. Waksman collection at Rutgers University, and special groups of bacteria from R. S. Breed of the New York Agricultural Experiment Station and E. O. Jordan of the University of Chicago. Numerous other contributions have come in the course of years from other institutions and individuals, especially the Communicable Disease Center and the National Institutes of Health of the U. S. Public Health Service, and the Northern Research and Development Division of the U. S. Department of Agriculture; also by exchange with other culture collections throughout the world. The original collection, consisting of some 160 strains of bacteria, now embraces the 4,350 strains of microorganisms listed in this catalog plus a considerable number of as yet unlisted strains that are under further study.

Administration of the Collection

The committee under which the ATCC was organized consisted of two representatives each from the Society of American Bacteriologists, the McCormick Institute, and the National Research Council, and one each from the American Phytopathological Society, the American Association of Pathologists and Bacteriologists, and the American Zoological Society. When the Collection was returned to Washington, D. C. in 1937, after 12 years at the McCormick Institute, representation of the Institute was terminated. It was incorporated as a nonprofit organization in the District of Columbia in 1949, with control vested in a Board of Trustees composed of the remaining former participants and augmented by one representative from the Mycological Society of America and one from the American Institute of Biological Sciences. Thus its membership

reflects to some extent the interests of essentially all organizations concerned with microbiology in this country.

Financial Support of the Collection

The original grant from the Rockefeller Foundation was intended only to get the organization underway, and its routine operations were to be supported by fees from the sale of cultures. As the expense of maintaining the Collection grew with increasing size, the charge for cultures was raised moderately. Supplementary contributions were received from some of the pharmaceutical manufacturers, and the Society of American Bacteriologists subsidized the production of the catalogs of cultures which were issued from 1927 through 1949, but all these sources of income failed to meet the rising costs of maintaining the Collection. In 1949 the aid of the National Research Council was sought to rescue the Collection from financial peril. This aid took the form of a recommendation, in which the pharmaceutical and biological industries concurred, that a premium price be paid for cultures by commercial establishments. Charitable and educational institutions, and those engaged in nonprofit research, as well as individuals, would continue to receive cultures at approximately the cost of production. Aside from an independent endowment the Collection could not exist without the subsidy derived from the commercial fees for supplying cultures. This is because many cultures, important for historical purposes and for taxonomic study, are not the ones in current demand. In the absence of the continued preservation of these, however, the Collection could not justify a claim to being a repository of type cultures.

The Collection has in the past received certain grants-in-aid from the United Nations Educational, Scientific and Cultural Organizations, and also research grants for special projects from the Army Chemical Warfare Service, the Office of Naval Research, the National Science Foundation, and the National Institutes of Health. In the main, however, it has been self-supporting, on the income from the sale of cultures. All its routine operations in the preservation and distribution of cultures are paid for exclusively from that source. These costs include quarters, equipment, materials, and personal services.

Acknowledgments

Some of the benefactors of the ATCC have been mentioned. To them grateful appreciation is expressed. Many others, too numerous to mention individually, have been of frequent and material aid in furnishing cultures by contribution or exchange, in identifying cultures within their special area of interest, in calling attention to literature citations, and supplying reprints of their articles on which our reference library largely depends. Important recognition must be given, however, to certain culture collections and the personnel of their staffs. These include the Centraal Bureau voor Schimmelcultures of Netherlands, the National Collection of Type Cultures and other collections of microorganisms in the United Kingdom, the Northern Utilization Research and Development Division of the United States Department of Agriculture at Peoria, Illinois, the National Institutes of Health at Bethesda, Maryland, and the Communicable Disease Center of the U.S. Public Health Service at Chamblee, Georgia.

Acknowledgment and appreciation are here expressed also for contributions toward the preparation of this catalog received from the Society of American Bacteriologists, the American Phytopathological Society, the American Association of Pathologists and Bacteriologists and the Mycological Society of America.

Distribution of Cultures

In general, the ATCC must restrict its distribution of cultures to clients who are trained in microbiology or who have access to a properly equipped laboratory under competent supervision. This is the invariable rule with respect to cultures of pathogenic organisms. Requests for cultures should show, by a business letterhead or requisition form, or in some other way, that this condition is met.

Exceptions to this rule are made with respect to certain microorganisms adapted to student use at the high school level, and some that can be used in the home preparation of beverages and milk products. Special lists of these will be sent on request.

Every effort within our means is made to provide cultures that are both pure and typical, but the Collection has only limited facilities for testing physiological and biochemical properties and none for testing animal or plant pathogenicity. It seeks and receives considerable aid from collaborators who are equipped for diagnostic studies of this type. The Collection must, however, disclaim responsibility for providing cultures that have particular and assured pathogenic and biochemical properties, but most of the strains recommended for biological assays are preserved in lyophilized form from tested cultures, and should be satisfactory if properly reconstituted and manipulated. In the event of any culture failing to prove viable, pure, and typical within these limitations, it will be replaced without charge, or the price refunded, at the option of the purchaser. It is expected that those receiving cultures will take suitable precautions to store them at a favorable temperature and to transfer them to appropriate media promptly. A claim of nonviability or other defect must be made within a reasonable time, usually two weeks, after the culture is received.

In the interest of accuracy orders should specify both the scientific name of the organism, indicated by underlining, and the strain number as given in this catalog. Many strains have different designations in other culture collections. Where only a strain number other than the ATCC is known, clients are requested to indicate the name of the collection or individual to which the number pertains, or give a literature citation that will aid in its recognition. Similarly, in requesting strains that are not found to be listed here, please give the name of the relevant author and if possible a literature citation.

At present, test tube cultures will be supplied unless lyophilized ones are requested, or if preferable or only available in that form (see separate note on Lyophilized Cultures). Cultures of a few strains, i.e. those used in testing mold resistance, are kept in stock ready for prompt sending, but most cultures must be transferred and grown before they can be sent. This may require only a day or two or sometimes several weeks. In placing orders, enough time should be allowed for the culture to grow before delivery is expected.

By direction of the Board of Trustees the price of cultures will be \$5.00 for institutional and \$12.00 for commercial orders, postpaid, effective March 1, 1959.

Because of the constant accession of new strains, which may be superior to those long kept in artificial culture, and because of corrections in identification and revision of nomenclature, the ATCC may at times substitute what are regarded as better strains than the particular ones ordered, unless the order specifies that no substitution should be made.

Information on the cultivation and maintenance of cultures ordered will be sent, when requested, with the cultures. The ATCC can not provide general directions for the cultivation of microorganisms, but would refer those needing this information to the numerous textbooks of bacteriology and mycology available in college and some general libraries. The Manual of Microbiological Methods, (1957) compiled under the auspices of the Society of American Bacteriologists, and published by the McGraw-Hill Book Co., New York, is a convenient source of much of this information.

Questions pertaining to the use of microorganisms in various technical applications, aside from those mentioned in the Use Section of this catalog and the references to literature given there, should preferably be directed to appropriate local or Federal government institutions. The ATCC claims no special competence in such matters and has no literature for distribution. It will try to be helpful to inquiring microbiologists, but it has definite—and narrow—limitations. The ATCC is unable at present to provide an identification service for unknown cultures.

Cost of Cultures

As noted above a differential charge for cultures is made between commercial clients—those using cultures primarily for pecuniary return, whether direct or indirect—and individuals and institutions engaged in public welfare work and nonprofit research. The distinction is not always easy to apply but, in general, business firms of any kind are assumed to belong to the first category; educational and charitable establishments, nonprofit research foundations, government laboratories, and individual scientists to the second. It is incumbent on those who wish to receive the discount to establish their eligibility if their status is not clearly defined.

The price of cultures is uniform for all strains. The commercial rate is \$10 per culture, postpaid by 1st class mail; air mail and special delivery are extra at cost. To commercial clients who order several cultures of the same strain at one time, a quantity discount is offered; details on request. A discount of 60 per cent is given to clients of the nonprofit group, but in this case a separate charge is made to cover packing and postage. This is 50 cents for one culture, 75 cents for two up to 7 cultures, and covers only 1st class surface mail or parcel post; air mail and special delivery are extra.

These prices are net, with payment in 30 days from date of invoice. We cannot send cultures C.O.D.

Lyophilized Cultures

A majority of the cultures in the ATCC are now maintained in lyophilized form so as to preserve them as nearly as possible in the original physiological state. It is the aim to lyophilize new accessions from the first subculture after their receipt.

When cultures are ordered in the lyophilized state they can be shipped promptly, with no delay for transfer and incubation. There is no impairment of viability during shipment as may occur with those sent in the growing state, nor is there ordinarily a need for special storage upon receipt. The double vial method and simple opening technique with our lyophilized preparations prevents exposure of the culture to air contamination, and of the worker to aerosols, resulting from sudden release of the vacuum. This method of lyophilization is described in detail in the Manual of Microbiological Methods, cited above.

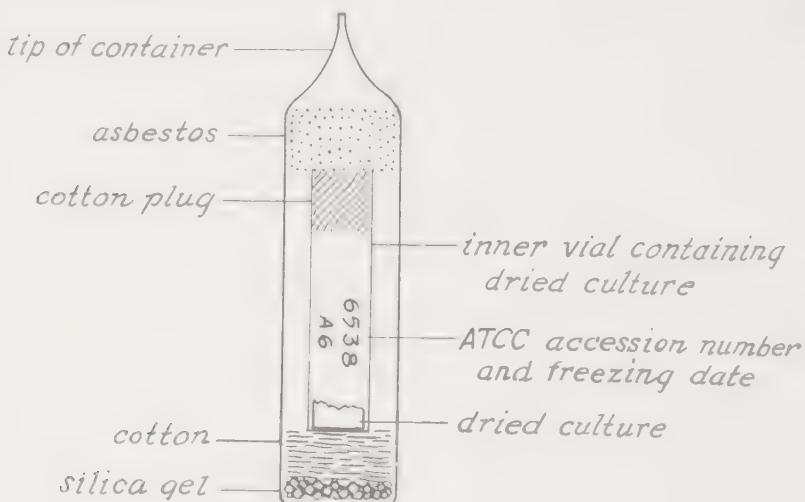


Diagram of ATCC lyophilized culture

To open a specimen, the pointed tip of the outer vial (diagram above) is heated in a Bunsen flame and a drop of water is added to crack the glass. The tip is tapped sharply with forceps or similar tool to break it off. The inner vial containing the culture can then be removed.

To grow the culture the dried pellet is aseptically transferred en masse to appropriate broth, or about 0.3 ml of broth is added to the inner vial with a 1 ml transfer pipette and mixed with the pellet, then the resulting suspension is transferred to broth or plated. The rehydrated culture should be incubated at the appropriate temperature until growth is evident. Sometimes recovery is slow and cultures should be incubated for two weeks before they are rejected as nonviable. If a particular medium formula is enclosed with the culture, it is suggested that it be used for best results.

Information on Nomenclature and Description of the Strains

The strains here listed are segregated into four major groups:

Bacteria (including Actinomycetales), Bacteriophages, Fungi, including Yeasts, and Algae and Protozoa. Within each group the arrangement is alphabetic by generic and specific names. The nomenclature for bacteria conforms to that of the 7th edition of Bergey's Manual of Determinative Bacteriology (1957); for yeasts to the monograph by J. Lodder and N. J. W. Kreger-van Rij (1952); for most fungi to the Mycological Index of the U.S. Department of Agriculture, and for special groups to the Manual of the Aspergilli by Thom and Raper (1940), Manual of the Penicillia by Raper and Thom (1949), and Manual of Clinical Mycology by Conant et al. (1954).

The scientific name of each species of microorganism is placed at the head of and to the left of the list of strains of that species, and is underlined to distinguish it from synonyms and other names that may have been applied. The ATCC accession numbers then follow at the left margin, in sequence from the earlier to the most recent acquisitions.

An asterisk following the strain number indicates that the culture was received from the author who described the species and was designated by him as the type culture, or that it has been designated as a typical culture in an authoritative taxonomic work.

If the name under which the culture was received differs from the name here indicated as valid, but is a recognized synonym, it is given in parentheses after the strain number. Next, in order, are given the source (institution or person) from which the ATCC received the culture, and the strain number by which it was identified in that collection, whether personal or institutional; then the address of the contributor when this is not indicated by the symbol for the institution itself (see list of abbreviations, page x); and the year in which the culture was received. Following this there may be accessory information, such as the strain number in other culture collections, the name of the original isolator of the strain, a statement as to its special properties or use, and a literature citation.

Where recent nomenclatural changes have been made, in particular from the nomenclature adopted in the 5th edition (1949) of the catalog, cross-references are provided from the antecedent names to those employed here. Not all synonyms are thus treated, but primarily those in which the change in nomenclature may not be readily recognized. For the bacteria, reference should be made to the 7th edition of Bergey's Manual of Determinative Bacteriology to identify synonyms and nomenclature changes that are not indicated here.

Pleomorphic fungi are in general listed under the name of the perfect stage even though the culture of a particular strain exhibits only the conidial stage. In this case the conidial stage (name under which the culture was received) is indicated in parentheses, as a synonym. An exception is made in the case of *Aspergillus* and *Penicillium* where all species are listed under these names whether or not a perfect stage name has been given, and in most of the species of *Fusarium* where a perfect stage is unknown or the names are unfamiliar; likewise in *Helminthosporium*, *Rhizoctonia*, and the imperfect stages of yeasts, such as *Candida* and *Torulopsis*. In these, the name of the conidial stage is used, though the name of the perfect stage may follow within parentheses and preceded by the equal sign.

Abbreviations Used in Indicating the Source of Cultures

AMC	Walter Reed Army Medical Center (formerly Army Medical School and Army Medical Department Research and Graduate School), Washington, D.C.
AMNH	American Museum of Natural History, New York, New York.
CBS	Centraal Bureau voor Schimmelcultures, Baarn, Netherlands.
CDC	Communicable Disease Center, U.S. Public Health Service, Chamblee, Georgia.
CIW	Carnegie Institution of Washington, Cold Spring Harbor, New York.
CMI	Commonwealth Mycological Institute, Kew, England. Strain numbers formerly designated IMI (for Imperial Mycological Institute) are included here.
ERDC	Engineering Research and Development Center, U.S. Army, Fort Belvoir, Virginia.
FDA	Food and Drug Administration, Washington, D.C.
IFO	Institute for Fermentation, Osaka, Japan.
IHM	Instituto de Higiene Experimental, Montevideo, Uruguay.
IOC	Instituto Oswaldo Cruz, Rio de Janeiro, Brazil.
NCA	National Canners Association, Washington, D.C.
NCIB	National Collection of Industrial Bacteria, Teddington, Middlesex, England.
LM	Laboratorium voor Microbiologie, Delft, Netherlands.
NCTC	National Collection of Type Cultures, London, England.
NIH	National Institutes of Health, Bethesda, Maryland.
NRRRL	Northern Utilization Research and Development Division, U.S. Department of Agriculture, Peoria, Illinois (formerly Northern Regional Research Laboratory).
QMRDC	Quartermaster Research and Development Center, U.S. Army, Natick, Massachusetts.
USDA	United States Department of Agriculture. The various divisions, except for the Regional Research Development laboratories, are not distinguished. When no address follows this symbol, one of the Washington, D.C. divisions or those located at Beltsville, Maryland, was the source.
WRRL	Western Utilization Research and Development Division, U.S. Department of Agriculture, Albany, California.

Other ATCC Catalogs and Lists

Separate catalogs of (1) Viruses and Rickettsiae Affecting Man and Animals, and (2) Plant Viruses, have been issued. They are currently being revised but copies of the original editions are still available.

A number of special lists of cultures, including strains that for one reason or another were omitted from this catalog, are in the course of preparation. The availability of strains other than those catalogued can be determined by correspondence.

Important Notice: Orders for virus specimens, either plant or animal, should always be sent on separate purchase requisitions from those for cultures.

BACTERIA

- Acetobacter aceti (Beijerinck) Beijerinck
8303 NCTC, strain 1345. 1941.
- Acetobacter acetigenus (Henneberg) Bergey et al.
11142 NCIB, strain 5346. 1952. O. Verona, Univ. di Pisa.
- Acetobacter acetosus (Henneberg) Bergey et al.
6438 K.B. Raper, strain B-468, NRRL. 1945. R.H. Vaughn.
NCTC strain 2224.
- Acetobacter ascendens (Henneberg) Bergey et al.
9323 NCTC, strain 4937. 1947.
- Acetobacter aurantius Kondo
12301 IFO, strain 3247. 1955.
- Acetobacter capsulatus Shimwell
11894 NCIB, strain 4943. 1954. J.L. Shimwell. J. Inst. Brewing, 1936, 32, 585.
- Acetobacter cerinus (Asai) Kondo
12303 IFO, strain 3262. 1955.
- Acetobacter gluconicus (Hermann)
9324 NCTC, strain 4739. 1947.
- Acetobacter industrius (Henneberg) Bergey et al.
12302 IFO, strain 3260. 1955.
- Acetobacter kuetzingianus (Hansen) Bergey et al.
6439 A.J. Kluyver, LM. 1946. NCTC strain 3924.
- Acetobacter lovaniense
12875 NCIB, strain 8620. 1956. W. Verhoeven strain L 1024.
- Acetobacter melanogenus Beijerinck
8147 K.B. Raper, strain B-63, NRRL. 1945. R.H. Vaughn.
9844 K.B. Raper, strain B-58, NRRL. 1945. N. Porges strain 27.
9937 C.B. van Niel, strain MA 61, Hopkins Marine Station. 1945.
- Acetobacter mesoxydans
12876 NCIB, strain 8622. 1956. W. Verhoeven strain L 1027.
- Acetobacter mobilis Tösić and Walker
12877 NCIB, strain 6428. 1956. J. Tösić strain 20. J. Inst. Brewing, 1944, 50, 296.
- Acetobacter oxydans (Henneberg) Bergey et al.
9433 K.B. Raper, strain B-147, NRRL. 1947.
- Acetobacter pasteurianus (Hansen) Beijerinck
6033 A.J. Kluyver, LM. 1946.
- Acetobacter peroxydans Visser't Hooft
838 A.J. Kluyver, LM. 1946.
- 12873 NCIB, strain 8138. 1956. A.J. Kluyver.
12874 NCIB, strain 8618. 1956. W. Verhoeven strain L 1374.
- Acetobacter rancens Beijerinck
7839 L.B. Lockwood, USDA. 1940. N. Porges strain 38.
- Acetobacter suboxydans Kluyver and de Leeuw
621 K.B. Raper, NRRL. 1944. A.J. Kluyver. Assay of p-aminobenzoic, nicotinic and pantothenic acids; production of sorbose. J. Biol. Chem., 1948, 174, 273.

BACTERIA

Acetobacter suboxydans (Continued)

621H E. De Ritter, Hoffman-La Roche, Inc. 1949. Assay of panthenol.

9322 NCTC, strain 7113. 1947.

Acetobacter turbidans Cosbie, Tosić and Walker

9325 NCTC, strain 6249. 1947. NRRL strain B-570.

Acetobacter viscosus Shimwell

11895 NCIB, strain 8131. 1954. T.K. Walker.

Acetobacter xylinum (Brown) Holland

10245 Laura C. Stewart, NIH. 1947. R.H. Vaughn.

10821 NCIB, strain 1375. 1950.

Acetobacter sp.

12878 NCIB, strain 6656. 1956. R.M. Nattrass strain Kenya 17. From vinegar.

Achromobacter fischeri Bergey et al.: See Photobacterium fischeri

Achromobacter hartlebii (Jensen) Bergey et al.

365 E.G. Hastings, Univ. of Wisconsin. 1925. Koch strain.

Achromobacter lipolyticus (Huss) Bergey et al.: See Brevibacterium lipolyticum

Achromobacter parvulus (Conn) Breed

4335 (Bacterium parvulum) H.J. Conn, New York Agric. Expt. Sta., Geneva. 1928. Expt. Sta. Bull. 1926, No. 494, p. 26.

Achromobacter perolens Turner: See Pseudomonas perolens

Achromobacter viscosus

12448 S.R. Venkataraman, strain L35FTS, Fisheries Tech. Sta., Kozhikode, India. 1956.

Actinobacillus lignieresii Brumpt

10811 Julia M. Coffey, strain 33444, New York State Dept. of Health. 1950. L. Thompson, Mayo Clinic. From cervical gland of cattle.

Actinobacillus mallei (Zopf) Thompson

10399 (Malleomyces mallei) AMC, strain China 5. 1958. From lung and nose of horse.

Actinomyces bovis Harz

10048 and 10049 C.W. Emmons, strains 1829 and 1833 (human), NIH. 1956.

12597 CDC, strain MY-565-55 (human). 1956. J.H. Spooner, New Jersey State Health Dept.

12836 Lucille K. Georg, strain B-99 (bovine), CDC. 1957.

13031 Esther Meyer, Univ. of Illinois. 1958. Isolated from case of bovine lumpy jaw.

Actinomyces israeli (Kruse) Lachner-Sandoval

12102 and 12103 A. Howell, Jr., strains 277 and 287 (human), NIH. 1955. Proc. Soc. Staff Meet., Mayo Clinic, 1951, 26, 169.

Actinomyces naeslundii Thompson and Lovestedt

12104 A. Howell, Jr., strain 279, NIH. 1955. From human sinus. Proc. Soc. Staff Meet., Mayo Clinic, 1951, 26, 169.

Actinoplanes philippinensis Couch

12427 J.N. Couch, strain P-15, Univ. of North Carolina. 1956. J. Elisha Mitchell Sci. Soc., 1950, 66, 87; 1955, 71, 148.

BACTERIA

- Aerobacter aerogenes (Kruse) Beijerinck
- 129 (Bacterium aerogenes) AMC. 1925.
- 211 (Bacillus lactis aerogenes) E.O. Jordan, Univ. of Chicago. 1925.
- 884 C.S. Gibbs, Univ. of Nanking. 1926. Fecal origin.
- 7256 W.A. Randall, Georgetown Univ. 1938. From well water.
- 8308 L.W. Parr, George Washington Univ. 1941.
- 8724 NRRL, strain B-199. 1942. Produces 2, 3-butylene glycol.
- 9621 R.J. Williams, Univ. of Texas. 1944. Univ. Texas Publ., 1942, 87, 4237.
- 12409 E.M. Weber, strain 1965-29-9, Chas. Pfizer Co., Inc., Brooklyn, N.Y. 1955.
- 12657 and 12658 NCIB, strains 8805 and 8806. 1956. Wilkinson strains A3 and A3(SL). Polysaccharide production. J. Gen. Microbiol., 1954, 11, 59.
- Aerobacter cloacae (Jordan) Bergey et al.
- 222 (Bacillus cloacae) E.O. Jordan, Univ. of Chicago. 1925. U.S. Pub. Health Repts., 1943, 58, 1175.
- 529 (Bacillus cloacae) K.F. Meyer, Univ. of Calif., Berkeley. 1925. U.S. Pub. Health Repts., 1943, 58, 1175.
- 961 and 962 M. Levine, strains 1011 (1) and 1009 (21), Iowa State Coll. 1926. U.S. Pub. Health Repts., 58, 1175.
- 10699 Margaret Pittman, strain PC3B, NIH. 1949. J. Bact., 1946, 51, 19.
- Aerobacter cloacae var. marocana
- 12666 A. Castellani, Inst. de Med. Trop., Lisbon. 1956.
- Aerococcus viridans Williams et al.
- 11563* NCTC, strain 8251. 1953. J. Gen. Microbiol., 1953, 8, 475.
- Aeromonas formicans Crawford
- 13136 R. Hugh, strain 513, George Washington Univ. 1958. H. Pivnic strain 258. J. Bact., 1957, 73, 247.
- 13137 R. Hugh, strain 514. 1958. I.P. Crawford's Pacific Grove strain of Pseudomonas formicans. J. Bact., 1954, 68, 734.
- Aeromonas hydrophila (Chester) Stanier
- 7965 (Proteus hydrophila) M.L. Speck, Univ. of Maryland. 1941.
- 9071 W.L. Kulp, strain P₂ (smooth), Univ. of Connecticut. 1943. From frog "red-leg." J. Bact., 1942, 44, 673.
- 11165 (Paracolobactrum aerogenoides) S.F. Snieszko, U.S. Fish and Wildlife Service, Kearneysville, W. Virginia. 1952. From aquarium fish.
- 11438 Mary T. Clement, strain 491, Natl. Res. Council, Ottawa, Canada. 1953. From salmon with red sore disease. Can. J. Res., 1942, 20, 161.
- 11439 Mary T. Clement, strain 492. 1953. From pike with red sore disease. Production of 2, 3-butanediol from beet molasses and sulphite waste liquor; xylokinase. Can. J. Technol., 1951, 29, 413; Nature, 1952, 170, 357.
- Aeromonas punctata (Zimmermann emend. Leimann and Neumann) Snieszko
- 11163 (Pseudomonas punctata) S.F. Snieszko, strain A, U.S. Fish and Wildlife Service, Kearneysville, W. Virginia. 1952.

BACTERIA

Aeromonas punctata (Continued)

11164 (*Pseudomonas punctata*) S.F. Snieszko, strain G. 1952.

Aeromonas sp.

7966 M.L. Speck, Univ. of Maryland. 1941. Received as *Proteus ichthyoismia*.

Agrobacterium radiobacter (Beijerinck and van Delden) Conn

4718 I.L. Baldwin, strain Cl, Univ. of Wisconsin. 1931.
J. Agric. Res., 1930, 41, 507.

6466 and 6467 N.R. Smith, strains 36 and 188, USDA. 1938.

Agrobacterium rhizogenes (Riker et al.) Conn

11325 A.J. Riker, Univ. of Wisconsin. 1952.

Agrobacterium tumefaciens (Smith and Townsend) Conn

143 AMC. 1925. Received as *Pseudomonas tumefaciens*.

4452 R.E. Buchanan, Iowa State College. 1929. From raspberry.

4720 I.L. Baldwin, strain A 1, Univ. of Wisconsin. 1931.
J. Agric. Res., 1930, 41, 507.

11095 N.R. Smith, strain BCG5Y, (blueberry), USDA. 1951.

11156, 11157 and 11158. W.C. Price, strains B61, B62, and B63,
Univ. of Pittsburgh. 1952. Phytopathology, 1952, 42, 10.

Alcaligenes faecalis Castellani and Chalmers

8750 H.J. Conn, strain 16, Agric. Expt. Sta., Geneva, N.Y.
1942.

Alcaligenes viscosus (Weldin and Levine) Weldin: See Alcaligenes viscolactis

Alcaligenes viscolactis (Mez) Breed (Alcaligenes viscosus)

337 L.A. Rogers, USDA. 1925. Received as *Lactobacillus viscosus*. Fromropy milk.

9036 B.W. Hammer, Iowa State College. 1943.

Alcaligenes sp.

10153 FDA, strain PCI 3. 1946. Bodenheimer's bacillus. Assay
of streptomycin and streptothricin.

Arizona Group: See Paracolobactrum arizonae

Arthrobacter citreus Sacks

11624 WRRL, 1953. Assay of subtilin.

Arthrobacter globiformis (Conn) Conn and Dimmick

8010 (*Bacterium globiforme*) N.R. Smith, strain 108, USDA.
1941. H.J. Conn. J. Bact., 1947, 54, 291.

Arthrobacter simplex (Jensen) Lochhead

6946 (*Corynebacterium simplex*) NCTC, strain 4215. 1938.
H.L. Jensen, New S. Wales. From rice soil. Proc. Linn. Soc. N.S.W. 1933, 58, 181.

Arthrobacter tumescens (Jensen) Conn and Dimmick

6947 (*Corynebacterium tumescens*) NCTC, strain 4216. 1938.
H.L. Jensen. From garden soil. Proc. Linn. Soc. N.S.W. 1933, 58, 181.

Arthrobacter ureafaciens (Krebs and Eggleston) Clark

7562 (*Corynebacterium creatinovorans*) R. Dubos, strain NC,
through M.X. Sullivan, Georgetown Univ. 1941. Internat. Bull. Bact. Nomen. and Taxon., 1955, 5(3), 111.

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Azotobacter agilis Beijerinck

- 7494 N.R. Smith, strain 55, USDA. 1939. D. Burk strain K-1;
H.W. Heuszer; A.J. Kluyver. J. Agric. Res., 1942, 65,
173.
9040 R.L. Starkey, strain 9, Agric. Expt. Sta., New Brunswick,
N.J. 1943.
9042 R.L. Starkey, strain 1. 1943.
9570 N.R. Smith, strain 36, USDA. 1944. R.L. Starkey;
S. Winogradsky, Azomonas strain 1.

Azotobacter beijerinckii Lipman: See Azotobacter chroococcum

Azotobacter chroococcum Beijerinck

- 480 N.R. Smith, strain 12, USDA. 1925.
4412 E.B. Fred, strain X-50, Univ. of Wisconsin. 1929. N.R.
Smith strain 7.
7486, 7488, 7490 and 7491 N.R. Smith, strains 47, 49, 51 and 52,
USDA. 1939. D. Burk strains B-3, B-5, B-7 and B-8;
O.P. Maximova. J. Agric. Res., 1942, 65, 173.
7493, 7497, 7498 and 7499 N.R. Smith, strains 54, 45, 44 and 43,
USDA. 1939. D. Burk strains B-10, C-4, C-5 and C-6;
J. Agric. Res., 1942, 65, 173.
9043, 9044 and 9045 R.L. Starkey, strains 43, 22 and 46, Agric.
Expt. Sta., New Brunswick, N.J. 1943.
9048, 9049 and 9051 R.L. Starkey, strains 23, 16 and 20. 1943.
9335 W.W. Umbreit, strain 77-50, Univ. of Wisconsin. 1944.
9544 N.R. Smith, strain 13, USDA. 1944. R.A. Green.
12981 (Azotobacter beijerinckii) D.B. Johnstone, Univ. of Vermont.
1957. J.P. Voets. Bact. Revs., 1954, 18, 195.

Azotobacter indicus Starkey and De

- 9037, 9038 and 9039 R.L. Starkey, strains 10, 32 and 11, Agric.
Expt. Sta., New Brunswick, N.J. 1943.
9540 N.R. Smith, strain 57, USDA. 1939. D. Burk strain 10A;
R.L. Starkey.

Azotobacter insignis Derx

- 12523 V. Jensen, strain 139, Royal Vet. and Agric. Coll.,
Copenhagen, Denmark. 1956.

Azotobacter macrocytogenes Jensen

- 12334 D.B. Johnstone, intermediate strain, Univ. of Vermont.
1955. H.L. Jensen. Acta Agric. Scand., 1955, 5, 280.
12335* D.B. Johnstone, original strain. 1955.
12336 D.B. Johnstone, mutant strain. 1955.

Azotobacter vinelandii

- 478 N.R. Smith, strain 16, USDA. 1925. J.G. Lipman.
7484 N.R. Smith, strain 46, USDA. 1939. D. Burk strain B-1;
O.P. Maximova.
7487 and 7489 N.R. Smith, strains 48 and 50, USDA. 1939.
D. Burk strains B-4 and B-6. O.P. Maximova. J. Agric.
Res., 1942, 65, 173.
7492 D. Burk, strain B-9, USDA. 1939. N.R. Smith strain 53.
O.P. Maximova.
7496 N.R. Smith, strain 42, USDA. J. Agric. Res., 1942, 65, 173.

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Azotobacter vinelandii (Continued)

9046 and 9047 R. L. Starkey, strains 37 and 5, Agric. Expt. Sta., New Brunswick, N.J. 1943.

9104 P. W. Wilson, Univ. of Wisconsin. 1943. Indust. and Engineer. Chem., 1943, 35, 354.

Azotomonas insolita Stapp

12412 A. W. Hofer, Cornell Univ., Geneva, N.Y. 1955. Bact. Revs., 1954, 18, 207.

Azotomonas sp.

12210 NCIB, strain 8627. 1955.

Bacillus alvei Cheshire and Cheyne

6344, 6348, 6349 and 10871 N.R. Smith, strains 662, 683, 684 and 685, USDA. 1938.

Bacillus aminovorans den Dooren de Jong

7046 N.R. Smith, strain 341, USDA. 1938. NCTC strain 2870. Zblt. Bakt. Abt. II, 1927, 71, 193.

Bacillus anthracis Cohn emend. Koch

10 Hyg. Lab., Washington, D.C., strain 152. 1925. N.R. Smith strain 1007. J. Bact., 1931, 21, 161.

240 and 241 E.O. Jordan, Univ. of Chicago. 1925. N.R. Smith strains 1008 and 1009. J. Bact., 1931, 21, 161.

937 and 938 A. Eichorn, Lederle Labs., Pearl River, N.Y., strains 1 and 2. 1926. N.R. Smith strains 1010 and 1011.

4229 USDA, strain S.C. 14. 1928. Pasteur vaccine strain 1; N.R. Smith strain 1012. J. Bact., 1931, 21, 161.

4728 J.S. Buckley, USDA, 1931. N.R. Smith strain 1013.

6602, 6603 and 6604 Veterinary Corps, AMC, strains 1, Graves and Gen-Sal. 1938. N.R. Smith strains 1016, 1017 and 1018.

6605 Veterinary Corps, AMC. 1938. N.R. Smith strain 1Q14 (bovine).

6606 and 6607 Veterinary Corps, AMC. 1938. N.R. Smith strains 1015 and 1019.

8705 Veterinary Corps, AMC, strain 46-PY-5. 1942.

9660 H.W. Schoening, strain SDR-44 (bovine), USDA. 1944.

11966 G.G. Wright, strain NP-A, Fort Detrick, Frederick, Md. 1954. J. Exptl. Med., 1951, 93, 523.

Bacillus aterrimus Lehmann and Neumann: See Bacillus subtilis var. aterrimus

Bacillus brevis Migula emend. Ford

8185 R.J. Dubos, strain BG, Rockefeller Inst. through N.R. Smith, USDA. 1941. Original gramicidin strain. Production of gramicidin and tyrocidin.

8186 R.J. Dubos, strain OKA, Rockefeller Inst. 1941.

8246 N.R. Smith, strain 604, USDA. 1941. NCTC strain 2611; Ford strain 27B.

9999 NCTC, strain 7096. 1946. Originally from R.L.M. Syng, Lister Inst., London, England.

10027 N.R. Smith, strain 605, USDA. 1946.

10068 WRRL. 1946.

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Bacillus brevis (Continued)

11031 N.R. Smith, strain 799, USDA. 1951.

Bacillus cascainensis

12327 A. Castellani, Inst. de Med. Trop., Lisbon. 1955. Annales de l'Institut Pasteur, Paris, Oct., 1955.

Bacillus cereus Frankland and Frankland

2 AMC, strain 800. 1925. Received as Bacillus agri. N. R. Smith strain 342.

246 E.O. Jordan, Univ. of Chicago. 1925. Received as Bacillus lactimorbus. N.R. Smith strain 733.

4342 (Bacillus lacticola) A. Stewart, Florida State College for Women. 1928. N.R. Smith strain 731.

6464, 6465, 6472 and 6629 N.R. Smith, strains 210, 244, 701 and 249, USDA. 1938.

7004 (Bacillus albolactis) F.S. Orcutt, Virginia Polytech. Inst., Blacksburg. 1938. N.R. Smith strain 721.

7039 (Bacillus metiens) N.R. Smith, strain 621, USDA. 1938. J.R. Porter, State Univ. of Iowa.

7064 N.R. Smith, strain 201, USDA. 1938.

7483 M.L. Stone, New York Univ. 1939.

9139 N.R. Smith, strain 232, USDA. 1943. W.W. Ford.

9592 W.A. Randall, FDA. 1944. Penicillin resistant.

9620 R.J. Williams, Univ. of Texas. 1944. N.R. Smith strain 1122.

9634 S.A. Waksman, strain O, Agric. Expt. Sta., New Brunswick, N.J. 1944. Received as Bacillus mycoides. For antibiotic assay.

9818 (Bacillus lactis) N.R. Smith, strain 879, USDA. 1945.

10702 W.A. Randall, strain 5, FDA. 1949. A. Dornbush. Ann. New York Acad. Sci., 1948, 51, 218.

10876 N.R. Smith, strain 1256, USDA. 1951. NRRL strain B-569. Production of penicillinase.

10987 N.R. Smith, strain 248, USDA. 1951.

Bacillus cereus var. mycoides (Flügge) Smith, Gordon and Clark

6462 and 6463 (Bacillus mycoides) N.R. Smith, USDA, strains 273 and 306. 1938.

10206 N.R. Smith, strain 936, USDA. 1947.

11778 W.A. Randall, strain PCI 213, FDA. 1954. For achromycin, aureomycin and terramycin assay.

Bacillus circulans Jordan and Ford

61 AMC, strain 732. 1925. Received as Bacillus fusiformis. N.R. Smith strain 727; W.W. Ford strain 10.

4513, 4515, 4516 and 4530 W.W. Ford, strains 26, 24, 7 and 28, Johns Hopkins Univ. 1929. N.R. Smith strains 726, 728, 313 and 746.

7049 N.R. Smith, strain 358, USDA. 1938.

8241 N.R. Smith, strain 716, USDA. 1941. Anna Russ-Munzer, Prague.

8384 N.R. Smith, strain 760, USDA. Soil Sci., 1940, 49, 185.

9966 W.A. Randall, strain PCI 221, FDA. 1946. Streptomycin assay.

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Bacillus circulans (Continued)

9995 N.R. Smith, strain 290, USDA. 1946. Received as Bacillus amylolyticus.

11032, 11033 and 11034 N.R. Smith, strains 294, 295 and 396, USDA. 1951.

Bacillus coagulans Hammer

7050 N.R. Smith, strain 609, USDA. 1938. B.W. Hammer through J.R. Porter, State Univ. of Iowa. USDA Misc. Publ., 1946, 559, 74.

8058 (Bacillus thermoacidurans) NCA, strain 45P. 1941. N.R. Smith strain 770.

10545 (Bacillus dextrolacticus) N.R. Smith, strain 784, USDA. 1948. C.H. Werkman. Produces d-lactic acid.

11014 N.R. Smith, strain 27, USDA. 1951.

11369 Mme. P. Chaix, strain C, Faculté des Sciences de Lyon, France. 1952. Biochim. et Biophys. Acta, 1952, 8.

12245 S.H. Hutner, Haskins Lab., New York, N.Y., through H. Sobotka, Mt. Sinai Hospital, New York City, 1955. NCA strain 3084 (B. thermoacidurans). Assay of folic acid. Proc. Soc. Exptl. Biol. and Med., 1955, 89, 210.

Bacillus firmus Werner

8247 N.R. Smith, strain 854, USDA. 1941. G. Bredemann, through J.R. Porter, State Univ. of Iowa. Zblt. Bakt. Abt. II, 1932, 87, 470.

Bacillus freudenreichii (Miquel) Migula

7053 N.R. Smith, strain 671, USDA. 1938. T. Gibson strain 68. J. Bact., 1935, 29, 491.

Bacillus fusiformis Gottheil: See Bacillus sphaericus

Bacillus globigii Migula: See Bacillus subtilis var. niger

Bacillus graveolens Gottheil: See Bacillus megaterium

Bacillus larvae White

9545 E.C. Holst, strain 846, USDA. 1944. From foulbrood of honey bees.

Bacillus laterosporus Laubach

64 AMC, strain 797. 1925. N.R. Smith strain 314.

4517 W.W. Ford, strain 29, Johns Hopkins Univ. 1929. N.R. Smith strain 347.

6456, 6457 and 9141 (Bacillus orpheus) N.R. Smith, strains 661, 681 and 682, USDA. 1938.

Bacillus lentinus Gibson

10840 and 10841 N.R. Smith, strains 670 and 1262, USDA. 1951. Gibson strains 165 and 238. Zblt. Bakt. Abt. II, 1935, 92, 368.

Bacillus licheniformis (Weigmann) Chester emend. Gibson

6598 AMC. 1937. N.R. Smith strain 745.

6634 N.R. Smith, strain 304, USDA. 1938. M.H. Soule, Univ. of Michigan, 1936; W.W. Ford.

8187 and 8190 R.J. Dubos, Rockefeller Inst. 1941. N.R. Smith strains 778 and 776; NCTC strains 2120 and 2118. Compt. Rend. Sec. Biol., 1925, 92, 72.

8480 C. Lamanna, Oregon State College. 1942. Knaysi strain S8; N.R. Smith strain 1128.

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Bacillus licheniformis (Continued)

- 9259 N.R. Smith, strain 900, USDA. 1943. J.R. Porter, State Univ. of Iowa.
- 9789 G.A. Ledingham, National Research Council, Ottawa, Canada. 1945. N.R. Smith strain 978; NCTC strain 2586; W.W. Ford strain 1. Production of glycerol and 2, 3-butanediol. *Science*, 1945, 101, 245.
- 9800 NCTC, strain 6346, 1945. N.R. Smith strain 243. *Brit. J. Exptl. Path.*, 1944, 25, 96.
- 9859 N.R. Smith, strain 329, USDA. 1945. Received as *Bacillus vulgatus*. NCTC strain 1097.
- 9945 N.R. Smith, strain 712, USDA. 1945. Produces d-glutamic acid. *J. Biol. Chem.*, 1942, 145, 415.
- 9945a C.B. Thorne, strain CD-2, Fort Detrick, Frederick, Md. 1954. Produces glutamyl polypeptide. *J. Bact.*, 1954, 68, 307.
- 10716 B.A. Johnson, strain Tracy I, Columbia Univ. 1949. N.R. Smith strain 1330. F.L. Meleney. Produces bacitracin.
- 11560 M. Damodaran, strain P-8, National Chem. Lab., Poona, India. 1953.
- 11945 and 11946 F.E. Clark, strains 1331 and 1333, USDA. 1954.

Bacillus macerans Schardinger

- 843 (*Aerobacillus macerans*) Evelyn B. Tilden, NIH. 1942. N.R. Smith strain 1093. *J. Bact.*, 1942, 43, 527.
- 7048 N.R. Smith, strain 649, USDA. 1938. Received as *Bacillus betanigrificans*.
- 7068 N.R. Smith, strain 278, USDA. 1938.
- 7069 and 8244 N.R. Smith, strains 277 and 888, USDA. 1942.
- 8509, 8510, 8513 and 8514 Evelyn B. Tilden, strains 18, 2037, 577 and 588, NIH. 1942. N.R. Smith strains 1095, 1096, 1097 and 1098. *J. Bact.*, 1942, 43, 527.
- 8515, 8516 and 8517 Evelyn B. Tilden, strains 573, 585 and 583, NIH. 1942. N.R. Smith strains 1099, 1100 and 1101. *J. Bact.*, 1942, 43, 527.
- 8518 Evelyn B. Tilden, NIH. 1942. Received as *Bacillus betanigrificans*. N.R. Smith strain 646. *J. Bact.*, 1942, 43, 527.

Bacillus megaterium de Bary

- 89 (*Bacillus petasites*) AMC, strain 735. 1925. N.R. Smith strain 343; W.W. Ford strain 13.
- 4531 (*Bacillus tumescens*) W.W. Ford, strain 23A, Johns Hopkins Univ. 1929. N.R. Smith strain 1102.
- 6458 and 6459 N.R. Smith, strains 240 and 269, USDA. 1938.
- 7051 and 7052 (*Bacillus danicus*) N.R. Smith, strains 247 and 246. USDA. 1938. Löhnis and Smith.
- 7056 (*Bacillus malabarensis*) N.R. Smith, strain 239, USDA. 1939. Pillai and Löhnis.
- 7481 T. Benedek, 25 E. Washington St., Chicago, Illinois. 1939. Received as *Bacillus endoparasiticus*. N.R. Smith strain 1103. *Mycopathologia*, 1938, 1, 26.
- 7703 (*Bacillus graveolens*) N.R. Smith, strain 615, USDA. 1940. J.R. Porter, State Univ. of Iowa; G. Bredemann.

BACTERIA

Bacillus megaterium (Continued)

- 8245 N.R. Smith, strain 234, USDA. 1941. AMNH strain 734.
USDA Misc. Publ., 1946, No. 559.
9885 J.W. Foster, strain 4R6259, Merck and Co., Inc., Rahway, N.J. 1945. Strain Cornell 90. Streptomycin cup assay.
10778 NRRL, strain B-938. 1950. Production of vitamin B₁₂.

Bacillus mesentericus (Flügge) Trevisan (American strains): See Bacillus pumilus

Bacillus mesentericus (Flügge) Trevisan (European strains): See Bacillus subtilis (USDA Misc. Publ., 1946, No. 559)

Bacillus mycoides Flügge: See Bacillus cereus var. mycoides

Bacillus niger Migula: See Bacillus subtilis var. niger

Bacillus pasteurii (Miquel) Migula

- 6452 and 6453 N.R. Smith, strains 674 and 675, USDA. 1938.
F. Löhnis, Leipzig.
11859 Frances F. Lombard, USDA. 1954. N.R. Smith strain 929.
Production of urease. J. Bact., 1934, 28, 313; op. cit. 1954, 68, 67.

Bacillus polymyxa (Prazmowski) Migula

- 842 LM. 1926. N.R. Smith strain 1105.
7047 (Bacillus asterosporus) N.R. Smith, strain 251, USDA.
1938. Král Collection.
7070, 8519, 8521 and 8522 Evelyn B. Tilden, NIH. 1942. N.R.
Smith strains 279, 812, 252 and 293.
8523, 8524, 8525 and 8526 Evelyn B. Tilden, NIH. 1942. N.R.
Smith strains 354, 280, 813 and 297. J. Bact., 1942, 43, 527.
10401 P.G. Stansly, American Cyanamid Co., Stamford, Conn.
1947. N.R. Smith strain 2010. Production of polymyxin.
J. Bact., 1947, 54, 549.
12321 NRRL, strain B-510 RHG. 1955. Produces 2, 3-butylene
glycol.

Bacillus pumilus Gottheil

- 1, 18, 70, 71, 72 and 98 AMC, strains 794, 740, 501, 734a, 734
and 793. 1925. N.R. Smith strains 309, 724, 734, 735, 736
and 345.
945 (Bacillus mesentericus) M. Levine, strain 2081, Iowa State
College. 1926. N.R. Smith strain 738.
4510, 4520 and 4522 W. W. Ford, strains 27, 9 and 8, Johns Hopkins
Univ. 1929. N.R. Smith strains 725, 739 and 316.
6631 and 6632 (Bacillus mesentericus) N.R. Smith, strains 236
and 247, USDA. 1938.
7061 N.R. Smith, strain 272, USDA. 1938. Král Collection.
7065 N.R. Smith, strain 355. 1938. Elizabeth McCoy; G. Truffaut.

Bacillus sphaericus Neide

- 245 E.O. Jordan, Univ. of Chicago. 1925. Received as Bacillus lactimorbus. N.R. Smith strain 732.
4525 W. W. Ford, strain 25, Johns Hopkins Univ. 1929. N.R. Smith
strain 348.
7054 and 7055 N.R. Smith, strains 339 and 350, USDA. 1941.
Received as Bacillus fusiformis.

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Bacillus sphaericus (Continued)

7063 (Bacillus serositidis) N.R. Smith, strain 668, USDA. 1936.
J.G. LaCorte, Brazil.

10208 N.R. Smith, strain 966, USDA. 1946. J.R. Porter.

12123 NCA, strain M-7. 1955. N.R. Smith strain T111.

12300 F.E. Clark, strain 866, USDA. 1955.

Bacillus sphaericus var. rotans (Roberts) Smith, Gordon and Clark

4978 N.R. Smith, strain 633, USDA. 1944. J.L. Roberts.
J. Bact., 1935, 29, 234.

12844 NCIB, strain 8867. 1956. J.L. Peel strain CO8.

Bacillus stearothermophilus Donk

7953 C.P. Hegarty, Georgetown Univ. 1941. NCA strain 1518;
N.R. Smith strain T17. Steam sterilization control.

7954 C.P. Hegarty. 1941. NCA strain 1503; N.R. Smith strain
T19. J. Infect. Dis., 1926, 39, 89.

8005 M.W. Yale, strain BD53, New York State Agric. Expt. Sta.,
Geneva. 1941. N.R. Smith strain T281.

10149 N.R. Smith, strain 15, USDA. 1946. Received as Bacillus
calidolactis.

Bacillus subtilis Cohn emend. Prazmowski

82 (Bacillus panis) AMC, strain 796. 1925. N.R. Smith strain
315; W.W. Ford strain 5.

465 N.M. Harris, Ottawa, Canada. 1925. N.R. Smith strain 743.
Science, 1925, 62, 57.

943 M. Levine, strain 2062, Iowa State College. 1926. N.R.
Smith strain 737.

4344 A. Stewart, Florida State Coll. for Women. 1928. N.R.
Smith strain 741.

4529 (Bacillus vulgatus) W.W. Ford, strain 3, Johns Hopkins
Univ. 1929. N.R. Smith strain 1004.

4944 NCTC. 1934. N.R. Smith strain 1106.

6051* H.J. Conn, strain Marburg, New York State Agric. Expt.
Sta., Geneva. J. Infect. Dis., 1930, 46, 341.

6633 N.R. Smith, strain 231, USDA. 1943. PCI strain 219.
Production of subtilin and assay of streptomycin and
aureomycin. Arch. Biochem., 1944, 4, 297.

6984 S. Hermann, Prague. 1938. N.R. Smith strain 747.

7003 F.S. Orcutt, Virginia Polytech. Inst., Blacksburg. 1938.
Received as Bacillus graveolens. N.R. Smith strain 730.

7058 and 7059 (Bacillus natto) N.R. Smith, strains 351 and 352,
USDA. 1938. J. Hanzawa.

7067 (Bacillus vulgatus) N.R. Smith, strain 238, USDA. 1938.
AMNH strain 725.

7480 T. Benedek, Chicago, Illinois. 1939. Received as Bacillus
endoparasiticus. N.R. Smith strain 1107. Mycopathologia,
1938, 1, 26.

8188 R.J. Dubos, Rockefeller Inst. 1941. Received as Tyrothrix
minimus. N.R. Smith strain 773; NCTC strain 2122. Compt.
Rend. Sec. Biol., 1925, 92, 72.

8189 R.J. Dubos. 1941. Received as Tyrothrix scaber. N.R.
Smith strain 774.

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Bacillus subtilis (Continued)

- 8472 and 8473 N.R. Smith, strains 763 and 762, USDA. 1942.
R.P. Meyers, Sealtest Labs., Baltimore.
- 9466 W.A. Randall, strain PCI 220, FDA. 1944. NRRL strain B-558; N.R. Smith strain 1088. J. Bact., 1945, 49, 411.
- 9524 J.W. Foster, strain 3R9675, Merck and Co., Inc., Rahway, N.J. 1944. N.R. Smith strain 1109. J. Bact., 1944, 47, 43.
- 9799 NCTC, strain 6276. 1945. N.R. Smith strain 1125. Produces penicillinase. Brit. J. Exptl. Pathol., 1944, 25, 96.
- 9858 N.R. Smith, strain 237, USDA. 1945.
- 9860 and 9943 N.R. Smith, strains 330 and 979, USDA. 1945.
NCTC strains 2590 and 2587.
- 10774 L.G. Colio, Wyeth Inst. of Applied Biochemistry, Philadelphia. Produces bacillomycin B. Proc. Soc. Exptl. Biol. and Med., 1948, 67, 539.
- 10783 NRRL, strain B-543. 1950.
- 11774 NCTC, strain 8236. 1954. Brit. Pharmacopeia, 1953, p. 796.
- 11838 AMC, strain 46-A-6. 1954. Viomycin assay.
- 12100 NCA, strain 1558. 1955.
- 12432 D.A. Harris, strain 56R188 (MB 32), Merck and Co., Inc., Rahway, N.J. Assay of cathomycin and novobiocin. Appl. Microbiol., 1956, 4, 307.
- 12695 P. Lallouette, strain 51-52, Soc. d'Etudes et d'Applications Biochimiques. 1956.
- Bacillus subtilis var. aterrimus (Lehmann and Neumann) Smith et al.
- 4925 (Bacillus nigrificans) F.W. Fabian, Michigan State College. 1934. N.R. Smith strain 740. From pickle brine.
- 6460, 6461 and 7060 N.R. Smith, strains 259, 275 and 659, USDA. 1938.

Bacillus subtilis var. niger (Migula) Smith et al.

- 6454 (Bacillus niger) N.R. Smith, strain 229, USDA. 1938.
- 6455 (Bacillus niger) N.R. Smith, strain 265, USDA. 1938. I. Hall strain 1509.
- 6537 (Bacillus niger) Elizabeth McCoy, Univ. of Wisconsin. 1938.
- 7972 (Bacillus niger) N.R. Smith, strain 650, USDA. 1941. NCTC strain 2736.
- 9372 (Bacillus globigii) N.R. Smith, strain 1221a, USDA. 1947.
Hot air sterilization control.

Bacillus thiaminolyticus Matsukawa and Misawa

- 11376 and 11377 K. Arima, Univ. of Tokyo, Japan. 1952. Produce thiaminase. Acta Scholae Medicinalis Universitatis Kioto, Japan, 1952, 30, 127.

Bacillus thuringiensis Berliner

- 10792 E.A. Steinhaus, Univ. of California. 1950. N.R. Smith strain 996; Mattes strain. Zietschr. angew. Ent., 1915, 2, 29.

Bacillus spp.

- 12016 NCA, strain 2184. 1955. Obligate thermophile from flat sours in canned peas.
- 12456 NCA, strain 9499. 1956. From canned pea soup.
- 12480 G.B. Garner, strain 684, Univ. of Missouri. 1956. From sheep rumen. Assay of nitrate.

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- Bacterium agglutinabile Wilson
6868 NCTC, strain 2461. 1938. J. Hyg., 1927, 26, 213.
- Bacterium aminovorans (den Dooren de Jong)
6870 NCTC, strain 2872. 1938. Zblt. Bakt. Abt. II, 1927, 71, 193.
- Bacterium ammoniagenes Cooke and Keith: See Brevibacterium ammoniagenes
- Bacterium bibulum (McBeth and Scales) Holland
483 N.R. Smith, strain 122, USDA. 1925. Bureau of Plant Industry Bull. 1913, 266.
- Bacterium cadaveris
9760 N.S. Ferry, strain 04414, Parke, Davis and Co., Detroit, Mich. 1945. NCTC strain 6578. J. Biol. Chem., 1944, 156, 401. L-lysine decarboxylation.
- Bacterium cyclo-oxydans
12673 Helen Kroll, strain SC 2315, Squibb Inst. 1956.
- Bacterium denitrificans Chester
8453 NCTC, strain 1656. 1945. From soil.
- Bacterium enterocoliticum Schleifstein and Coleman
9610 Julia M. Coffey, strain 38114, New York State Dept. of Health. 1944. From glanders-like infection of face. New York State J. Med., 1939, 39, 1749.
- Bacterium globiforme Conn: See Arthrobacter globiformis
- Bacterium havaniensis Chester
4001 R.S. Breed, New York Agric. Expt. Sta., Geneva. 1927. Zblt. Bakt. Abt. II, 1903, 11, 404.
- Bacterium hebetisiccus Steinhaus
8364 E.A. Steinhaus, NIH. 1942. From "walking stick" (Diapheromera femorata). J. Bact., 1941, 42, 762.
- Bacterium imperiale Steinhaus: See Brevibacterium imperiale
- Bacterium incertum Steinhaus: See Brevibacterium incertum
- Bacterium linens Weigmann: See Brevibacterium linens
- Bacterium liquatum McBeth and Scales
485 USDA, strain 135. 1925. Zblt. Bakt. Abt. II, 1913, 39, 20.
- Bacterium mycooides (Grotenfelt) Migula
4004 R.S. Breed, New York Agric. Expt. Sta. 1927. From Pribram Collection. Zblt. Bakt. Abt. II, 1903, 11, 458.
- Bacterium orleanense Henneberg
9432 NRRL, strain B-55. 1947. Vinegar manufacture.
- Bacterium parvulum Conn: See Achromobacter parvulus
- Bacterium phosphoreum (Cohn) Molisch: See Photobacterium phosphoreum
- Bacterium stewarti Erw. Smith: See Xanthomonas stewartii
- Bacterium udum Kellerman et al.: See Cellulomonas uda
- Bacterium zopfii Kurth: See Kurthia zopfii
- Bacteroides distasonis Eggerth and Gagnon
8503 A.H. Eggerth, Long Island Coll. of Med. 1942. J. Bact., 1933, 25, 403.
- Bacteroides funduliformis (Halle) Bergey et al.: See Sphaerophorus necrophorus
- Bacteroides limosus Eggerth: See Eubacterium limosum
- Bacteroides ovatus Eggerth and Gagnon
8483 A.H. Eggerth, Long Island Coll. of Med. 1954.

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Bacteroides symbiosus Stevens

12829 R.E. Reeves, Louisiana State Univ. 1957. Derived from Shaffer strain 2. Used in cultivation of *Entamoeba histolytica*.

Bacteroides thetaiotaomicron (Distaso) Kelly

8492 A.H. Eggerth, Long Island Coll. of Med. 1954.

Bacteroides tumidus Eggerth and Gagnon

8496 A.H. Eggerth, Long Island Coll. of Med. 1942. *J. Bact.*, 1933, 25, 405.

Bacteroides varius Eggerth and Gagnon: See *Sphaerophorus varius*

Bacteroides vulgatus Eggerth and Gagnon

8482 A.H. Eggerth, Long Island Coll. of Med. 1954.

Bacteroides sp.

9817 L.L. Dienes strain 132. See *Sphaerophorus freundii*.

Ballerup group: See *Escherichia freundii*

Beggiatoa alba (Vaucher) Trevisan

11028 and 11029 E.G. Pringsheim, strains A and D, Univ. of Cambridge, England. 1951.

Betabacterium vermiciforme (Ward) Mayer

11540 NRRL, strain B-1127 M. 1953. H.D. Mayer via A.J. Kluyver. Bacterial component of ginger beer plant (Tibi-Konsortium). Inaug. Diss. Univ. Utrecht. 1938.

13133 NRRL, strain B-1139. 1958. Dextran-producer.

Bordetella bronchiseptica (Ferry) Moreno-López (*Brucella bronchiseptica*)

19 AMC. 1925.

780 E.M. Houghton, strain 0336 (canine), Parke, Davis and Co., Detroit, Mich. 1926. N.S. Ferry.

785 E.M. Houghton, strain 01467 (murine), Parke, Davis and Co. 1926. H.P. Hoskins.

786 F. Stimpert, strain 01468 (human), Parke, Davis and Co. 1926. N.S. Ferry.

4617 K.B. Raper, strain B-140, NRRL. 1948. W.A. Hagan. PCI strain 1701. Assay of polymyxin.

10580 F. Stimpert, strain 01327 (canine), Parke, Davis and Co. 1949. N.S. Ferry.

12714 FDA, PCI strain 1701/O. 1957. Resistant to oxytetracycline.

Bordetella parapertussis (Eldering and Kendrick) Moreno-López

9305 (*Hemophilus parapertussis*) E.W. Flosdorf, strain 517, Univ. of Pennsylvania. 1944.

Bordetella pertussis (Holland) Moreno-López (*Hemophilus pertussis*)

190 Pearl L. Kendrick, Univ. of Michigan. Rough strain. 1953. Eli Lilly strain 2205.

8417 R.S. Muckenfuss, strain M-37, N.Y. Dept. of Health. 1938.

8467 J.A. Toomey, strain F, City Hosp., Cleveland, Ohio. 1942.

8478 Julia M. Coffey, strain 40103, New York State Dept. of Health. 1958.

9306 E.W. Flosdorf, strain 589, Univ. of Pennsylvania. 1944.

9340 Margaret Pittman, strain 5, NIH. 1958. Project L. Kendrick strain 17921.

9797 Margaret Pittman, strain 18323, NIH. 1956.

9832 Margaret Pittman, strain 16945, NIH. 1957. Strain 11330; AMC strain 36-C-2.

BACTERIA

Bordetella pertussis (Continued)

- 10380 Grace Eldering, strain 10-536, Michigan Dept. of Health. 1956. Production of pertussis vaccine.
11615 Pearl L. Kendrick, strain S25, Univ. of Michigan. 1953. Parke, Davis and Co. strain O 1646. Rough strain.
12741, 12742 and 12743 Grace Eldering, strains 5373, 5374 and 5375, Michigan Dept. of Health. 1957. Else K. Andersen strains 2592, 3747 and 3865. Acta Path. et Microbiol. Scand., 1953, 33, 202; J. Bact., 1957, 74, 133.

Additional strains available upon request.

Brevibacterium acetylicum (Levine and Soppeland) Reed

(*Flavobacterium acetylicum*)

- 953 M. Levine, strain 1005, Iowa State College. 1926. From creamery waste.
954 M. Levine, strain 1006 (2). 1926.

Brevibacterium ammoniagenes (Cooke and Keith) Breed

- 6871 and 6872 (*Bacterium ammoniagenes*) NCTC, strains 2398 and 2399. 1948. J. Bact., 1927, 13, 315.

Brevibacterium helvolum (Zimmermann) Lochhead

- 11822 (*Corynebacterium helvolum*) C.B. van Niel, strain D.1.1. YDC, Hopkins Marine Station. 1954. Internat. Bull. Bact. Nomen. and Taxon. 1955, 5, 115.

Brevibacterium imperiale (Steinhaus) Breed

- 8365 (*Bacterium imperiale*) E.A. Steinhaus, strain 72, Rocky Mountain Lab., NIH, Hamilton, Montana. 1942. From *Eacles imperialis*. J. Bact., 1941, 42, 777.

Brevibacterium incertum (Steinhaus) Breed

- 8363 (*Bacterium incertum*) E.A. Steinhaus, Rocky Mountain Lab., NIH, Hamilton, Montana. 1943. From *Tibicen linnei*.

Brevibacterium linens (Weigmann) Breed (*Bacterium linens*)

- 8377 L.A. Rogers, USDA. 1942. From Brie cheese.
9172 R.S. Breed, strain 56b, New York Agric. Expt. Sta., Geneva. 1943. H. Weigmann. From Harzerkase cheese.
9174 R.S. Breed, strain 56i. 1943. H. Weigmann. From Romadur cheese.
9175 R.S. Breed, strain KC. 1943. From Camembert cheese.

Brevibacterium lipolyticum (Huss) Breed

- 11367 (*Achromobacter lipolyticum*) M.M. Rayman, strain 107. Chicago Quartermaster Depot. 1952. C.M. Wilson. Food Res., 1952, 17, 326.

Brevibacterium vitarumen (Knutsen) Breed

- 10234 (*Flavobacterium vitarumen*) M.A. Farrell, Pennsylvania State Coll. 1947.

Brucella abortus (Schmidt and Weis) Meyer and Shaw

- 4315 and 4316 I.F. Huddleson, strains William and Hall (human). Michigan State Coll. 1928. Mich. Agric. Expt. Sta., Tech. Bull. No. 199, 1929.

- 4319, 4320 and 4321 I.F. Huddleson, strains 200, 400 and 1 (bovine). 1928.

- 6610, 6611 and 6613 Veterinary Corps, AMC, strains 1001, 629 and 18. 1938.

BACTERIA

Brucella abortus (Continued)

- 9014 Julia M. Coffey, strain 322 (human), N. W. York State Dept. of Health. 1943.
9153 O. Felsenfeld, Chicago State Hospital. 1943.
9539 USDA, strain 2308/2665. 1944. Opsono-cytophagic tests.
10750 I. F. Huddleson, strain 1336, Michigan State Coll. 1949.
11192 USDA, strain 1119-3 serial No. 4. 1952. Production of antigen.

Brucella bronchiseptica (Ferry) Topley and Wilson: See Bordetella bronchiseptica

Brucella melitensis (Hughes) Meyer and Shaw

- 739 C. TenBroeck, strain Wagon, Union Medical College, Peking, China. 1926.
802 USDA, strain 77012. 1926. J. Agric. Res., 1924, 29, 586.
983 J. H. H. Pirie, South African Inst. for Med. Res., Johannesburg. 1927.
4306 and 4310 I. F. Huddleson, Michigan State Coll. 1928. Alice C. Evans strains 522 and 509 (caprine). Hyg. Lab. Bull. No. 143, 1925.
4309 I. F. Huddleson. 1928. Evans strain 462 (human).
6616 Veterinary Corps, AMC, strain 68. 1938.
8235 Alice C. Evans, strain 101, NIH. 1941.
8360 and 8371 I. F. Huddleson, strains 2461 and 85, Michigan State Coll. 1942.
9288 O. Felsenfeld, Chicago Medical School. 1944.
10001 USDA, strain K-1957. 1946.

Brucella suis Huddleson

- 4312, 4313 and 4314 I. F. Huddleson, strains 2012, 2a and Iowa 5, Michigan State Coll. 1928. Mich. Agric. Expt. Sta. Tech. Bull. No. 199, 1929.
6597 Veterinary Corps, AMC. 1938.
7978 and 9843 USDA, strains 4150-S and King-8. 1945.

Butyribacterium rettgeri Barker and Haas

- 10825 H. A. Barker, strain 32 of group A2, Univ. of Calif., Berkeley. 1950.

Caryophanon latum Peshkoff

- 11017 E. G. Pringsheim, Univ. of Cambridge, England. 1951.
12871 E. G. Pringsheim, Botanische Anstalten, Göttingen, Germany. 1957.

Caulobacter vibrioides Henrici and Johnson emend. Bowers et al.

- 11764 R. H. Weaver, Univ. of Kentucky. 1954.

Cellulomonas biazotaea (Kellerman et al.) Bergey et al.

- 486 N. R. Smith, strain 127, USDA. 1925.

Cellulomonas fimi (McBeth and Scales) Bergey et al.

- 484 (*Corynebacterium fimi*) Lab. of Soil Bacteriology, USDA, strain 133. 1925. From soil. Bureau Plant Industry Bull., 1913, No. 266.
3183 (*Corynebacterium fimi*) L. D. Bushnell, Kansas State Coll. 1941. Utilizes petroleum. Trans. Kansas Acad. Sci., 1941, 44, 39.

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- Cellulomonas flavigena (Kellerman and McBeth) Bergey et al.
482 N.R. Smith, strain 134, USDA. 1925. Zblt. Bakt. Abt. II, 1912, 34, 488.
- Cellulomonas gelida (Kellerman et al.) Bergey et al.
488 N.R. Smith, strain 126, USDA. 1925.
- Cellulomonas rossica (Kellerman and McBeth) Bergey et al.
9717 N.R. Smith, strain 128, USDA. 1945.
- Cellulomonas uda (Kellerman et al.) Bergey et al.
491 (Bacterium udum) Lab. Soil Bacteriology, USDA, strain 136. 1925. From compost.
- Cellvibrio fulvus Stapp and Bortels
12120 NCIB, strain 8634. 1954.
- Cellvibrio vulgaris Stapp and Bortels
12209 NCIB, strain 8633. 1954.
- Chromobacterium amethystinum (Chester) Holland
6915 A.J. Kluyver, strain L91, Delft, Holland. 1951. NCTC strain 4737, Cruess Callaghan strain 16. Sci. Proc. Roy. Dublin Soc., 1935, 21, 213.
- Chromobacterium lividum (Voges) Holland
12473 P.H.A. Sneath, strain HB, Natl. Inst. Med. Res., London. 1956. Proposed as type culture.
- Chromobacterium violaceum (Schroeter) Bergonzini
553 L.F. Rettger, Yale Univ. 1925. NCTC strain 8685.
6357 Sara E. Branham, NIH. 1938. Pathogenic when isolated. NCTC strain 8684.
- 12472 P.H.A. Sneath, strain MK, Natl. Inst. Med. Res., London. 1956. Proposed as type culture.
- 12540 and 12541 W.L. Sippel, strains Sealy (NCTC 9695) and Porter Coastal Plain Expt. Sta., Tifton Ga. 1956. Amer. Vet. Med. Assoc. Jr., 1954, 124, 467.
- 12542 W.L. Sippel, strain Reeves (NCTC 9372). 1956. Bovine strain.
- Clostridium acetobutylicum McCoy et al.
824 E.R. Weyer, Yale Univ. 1926. Received as Granulobacter pectinovorum. Strain W of McCoy and McClung. Produces butyl alcohol and acetone. J. Infect. Dis., 1935, 56, 333.
862 (Clostridium acetonigenum) A.J. Kluyver, strain E.VI. 3.1.2., Lab. voor Microbiol., Delft, Netherlands. 1926. Strain D of McCoy and McClung.
3625 I.C. Hall, strain 462, Univ. of Colorado. 1927. Strain H of McCoy and McClung.
4259 NCTC, strain 619. 1928. Strain T of McCoy and McClung. J. Infect. Dis., 1935, 56, 333.
8529 C.H. Castell, Ontario Agric. Coll., Guelph, Canada. 1942. Elizabeth McCoy's strain 48.
10132 NRRL, strain B-594. 1946. Produces acetone, butyl alcohol and ethyl alcohol.
- Clostridium aerofoetidum (Weinberg and Séguin) Bergey et al.
4894 (Bacillus aerofoetidus) NCTC, strain 505. 1933. Also called strain 208. Compt. Rend. Sec. Biol., 1916, 79, 116.

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- Clostridium bifermentans (Weinberg and Séguin) Bergey et al.
- 638 I.C. Hall, strain 76, Univ. of Colorado. 1926. Received as *Clostridium centrosporogenes*. J. Bact., 1936, 31, 560.
- 9714 and 9715 G.B. Reed, strains 211 and 213, Queen's Univ., Kingston, Ontario, Canada. 1945. Received as *Clostridium sordelli*.
- Clostridium botulinum (van Ermengem) Holland
- Type A
- 441 K.F. Meyer, strain 38a, Univ. of California, San Francisco. 1925. From chicken crop.
- 687 F.G. Reddish, strain 10a, USDA. 1926. Boise strain.
- 3502 I.C. Hall, strain 174, Univ. of Colorado. 1940.
- 7948 NCA, strain 62A. 1941. Strongly toxigenic.
- Type B
- 439 K.F. Meyer, strain 34B, Univ. of California. 1925.
- 7949 NCA, strain 213B. 1941. Strongly toxigenic.
- Type C
- 462 R. Graham, Univ. of Illinois. 1925.
- 6060 W.G. Workman, strain 526-A7, NIH. 1937. Type C alpha.
- 11772 Janet B. Gunnison, Univ. of California, San Francisco. 1954. Type C beta.
- Type D
- 9633 K.F. Meyer, Univ. of California, San Francisco. 1944. Received as *Clostridium parabotulinum bovis*. A. Theiler and E.M. Robinson. From lamziekte material in South Africa.
- Type E
- 9564 and 9565 Elizabeth L. Hazen, strains 36208 and 35396, New York Dept. of Health, N.Y. City. 1944.
- Clostridium butyricum Prazmowski
- 859 A.J. Kluyver, Lab. voor Microbiol., Delft, Netherlands, strain E.VI. 3.2.1. 1926. Received as *Clostridium pectinovorum*. Ref. H.J.L. Donker: Beidrage tot de Kennis der Boterzuur, Butylalcohol-en Acetonigistingen, Delft, 1926.
- 860 C.H. Castell, Ontario Agric. Coll., Guelph, Canada. 1942. Received as *Clostridium saccharobutyricum*. LM strain 10.
- 6014 and 6015 Elizabeth McCoy, strains 79 and 75, Univ. of Wisconsin. 1935. Král Collection.
- 8260 C.P. Hegarty, Georgetown Univ. 1941. Univ. of Wisconsin strain 39.
- Clostridium capitovale (Snyder and Hall) Snyder
- 9687 F.E. Clark, strain 8977-2, USDA. 1945.
- Clostridium carnis (Klein) Spray
- 9716 G.B. Reed, strain 6593, Queen's Univ., Kingston, Ontario, Canada. 1945.
- 10546 D. Sompolinsky, strain 766, State Vet. Serum Lab., Copenhagen, Denmark. 1949. Skand. Vet. Tidsk. Bakt., Patol., 1948, p. 506.
- Clostridium chauvoei (Aebling et al.) Holl and (Clostridium perfringens)
- 3516 I.C. Hall, strain 6, Univ. of Colorado. 1928. J. Infect. Dis., 1922, 30, 445.

BACTERIA

Clostridium chauvoei (Continued)

- 8083 I.C. Hall, strain 13114, Univ. of Colorado. 1941. Formerly strain 534. From Lister Inst., London, via J.P. Scott, Manhattan, Kansas.
10092 and 10093 C.D. Stein, strains 2585 and 2585A, USDA. From bovine blackleg.
11956, 11957 and 11958 L. D. Smith, strains 20, 1066 and 5730, Montana State Coll. 1954. From sheep blackleg.

Clostridium cylindrosporum Barker and Beck

- 7905 H.A. Barker, strain H.C. 1, Univ. of California, Berkeley. 1941. J. Biol. Chem., 1941, 141, 3.

Clostridium difficile (Hall and O'Toole) Prévot

- 9689 F.E. Clark, strain 90556-M6S, USDA. 1945.

Clostridium fallax (Weinberg and Séguin) Bergey et al.

- 7795 I.C. Hall, strain 254, Univ. of Colorado. 1940.

Clostridium felsineum (Carbone and Tombolato) Bergey et al.

- 13160 F.J. Simpson, strain A7, National Research Council, Canada. 1958.

Clostridium feseri Trevisan: See Clostridium chauvoei

Clostridium flabelliferum Sturges and Reddish

- 692 F.G. Reddish, strain 14, USDA. 1926. J. Bact., 1926, 11, 189.

Clostridium haemolyticum (Hall) Hauduroy et al.

- 9650 and 9652 Helen Plummer, strains 29866 (Folsom) and 33333, Connaught Labs., Univ. of Toronto, Canada. 1944. L.R. Vawter.

Clostridium histolyticum (Weinberg and Séguin) Bergey et al.

- 6282 Ida A. Bengtson, strain 22, NIH. 1938.

- 8034 AMC, strain 47-Q-3. 1952. R.S. Spray strain 22. Good collagenase activity.

Clostridium kluyveri Barker and Taha

- 12489 H.A. Barker, Univ. of California, Berkeley. 1956.

Clostridium lactoacetophilum Bhat and Barker

- 11914 H.A. Barker, Univ. of California, Berkeley. 1954. J. Bact., 1947, 54, 381.

Clostridium lentoputrescens Hartsell and Rettger

- 4191 W.S. Sturges, strain IV, Cudahy Packing Co., Omaha, Nebraska. 1936. Received as Clostridium putrefaciens. J. Bact., 1927, 14, 175.

- 4996 I.C. Hall, strain 220, Univ. of Colorado. 1935.

- 6391 NCTC, strain 260. 1938.

Clostridium multiformentans Bergey et al.

- 3538 I.C. Hall, strain 502, Univ. of Colorado. 1925. J. Infect. Dis., 1924, 35, 502.

Clostridium nigrificans Werkman and Weaver

- 7946 NCA, strain 3750. 1941.

Clostridium novyi (Migula) Bergey et al.

- 895 and 3540 I.C. Hall, strains 104 and 15197, Univ. of Colorado. 1927 and 1943, respectively.

- 7656 and 7658 I.C. Hall, strains 153 and 1033A. 1939.

- 7659 I.C. Hall, strain 1323. 1939.

BACTERIA

Clostridium novyi (Continued)

8680, 8681, 8682 and 8683 Margaret Yarlett, strains H, tPxO.
Guinea pig and A, Mellon Inst. of Research, Pittsburgh, Pa.
1942.

9076 I.C. Hall, strain 15200, Columbia-Presbyterian Med.
Center. 1943.

9690 F.E. Clark, strain 7304, USDA. 1945.

Clostridium paraputreficum (Beinstock) Snyder

9156 and 9157 I.C. Hall, strains 491 and 1538, Columbia-
Presbyterian Med. Center. 1943. J. Bact., 1934, 28, 181.

Clostridium parasporogenes (Bulloch et al.) Bergey et al.

693 F.G. Reddish, strain 15, USDA. 1926. NCTC strain 276.

Clostridium pasteurianum Winogradsky

6013 Elizabeth McCoy, strain 5, Univ. of Wisconsin. 1935.
S. Winogradsky.

7040 and 7041 C.H. Spiegelberg, strains 57 (rough) and 31 (smooth),
Honolulu, Hawaii. 1938.

Clostridium perfringens (Veillon and Zuber) Holland

846 J.C. Torrey, Cornell Univ. Med. School, New York City.
1926. J. Infect. Dis., 1925, 37, 161.

3624 I.C. Hall, Univ. of Colorado. 1934. A.J. Wilsdon's type A,
strain 26.

3626 I.C. Hall. 1938. A.J. Wilsdon's type B, strain 34.

3627 I.C. Hall. 1938. A.J. Wilsdon's type B, strain 37.

3628 I.C. Hall, 1938. A.J. Wilsdon's type C, strain 51.

3629 I.C. Hall. 1938. A.J. Wilsdon's type D, strain 21.

3630 I.C. Hall, strain 6510. 1941. A.J. Wilsdon's type D,
strain RI.

3631 I.C. Hall. 1938. A.J. Wilsdon's type D.

8009 Muriel Robertson, strain SR 12. 1941. NCTC strain 6784.
Highly toxicogenic.

9081 I.C. Hall, strain 13942, Columbia-Presbyterian Med. Center.
1943.

9856 NCTC, strain 6719. 1945.

10388 G.S. Schilling, strain 2279, Pitman-Moore Co., Indianapolis,
Indiana. 1948.

10543 M.J. Boyd, strain BP6K, Univ. of Cincinnati. Through NIH.
1948.

10873 NCTC, strain 6785. 1951.

Clostridium propionicum Cardon and Barker

12135* H.A. Barker, Univ. of California, Berkeley. 1955. J. Bact.,
1946, 52, 629.

Clostridium putrefaciens (McBryde) Sturges and Drake

6042 W.S. Sturges, strain 24, Cudahy Packing Co., Omaha,
Nebraska. 1936.

Clostridium roseum McCoy and McClung

6012 Elizabeth McCoy, strain 43, Univ. of Wisconsin. 1935.
Arch. Mikrobiol., 1935, 6, 239.

Clostridium septicum (Macé) Ford

461 I.C. Hall, strain 16, Cornell Univ. 1925. J. Infect. Dis.,
1922, 30, 445.

BACTERIA

Clostridium septicum (Continued)

- 680 F.G. Reddish, strain 1, USDA. 1926. NCTC strain 284.
6008 and 6009 I.C. Hall, strains 2398 and 8801, Univ. of Colorado.
1935.
8053 and 8054 F. Breed, strains 256 and 257, Norden Labs.,
Lincoln, Nebraska. 1941.
8065 Fort Dodge Serum Co., strain 5400. 1941. Veterinary Dept.,
Iowa State College.
11424 W.A. Altemeier, strain VSB, Univ. of Cincinnati. 1953.
12464 NCTC, strain 547. 1956. Pasteur III. Muriel Robertson.

Clostridium sphenoides (Bullock et al.) Bergey et al.

- 3560 I.C. Hall, strain 146, Univ. of Colorado. 1927. J. Infect.
Dis., 1922, 30, 445.

Clostridium sporogenes (Metchnikoff) Bergey et al.

- 319 I.C. Hall, Univ. of Colorado. 1943. Biochem. J. 1938, 32,
949. From AMNH strain 521.
3584 I.C. Hall, strain 388. 1926.
7955 NCA, "Putrefactive anaerobe" 3679. 1941. Food Research,
1946, 11, 405.
8074 I.C. Hall, strain 11797. 1941.
8075 I.C. Hall, strain 12622. 1941.
10000 NCTC, strain 533. 1946. Strain Belette.
11437 Harriette D. Vera, Baltimore Biological Labs. 1953. Heat
resistant strain.

Clostridium sticklandii Stadtman and McClung

- 12662* Thressa C. Stadtman, NIH. 1956.

Clostridium tetani (Flügge) Holland

- 449, 453 and 454 C. TenBroeck, Types III, V and VI, Peking,
China. 1925.
8033 Ida A. Bengtson, strain Tulloch, NIH. 1941. Type II.
9441 AMC, strain 47-S-3. 1947. Highly toxicogenic.
10709 AMC, strain 47-S-2. 1949.
10779 Julia M. Coffey, strain 43415, New York State Dept. of
Health. 1950. J. Immunol., 1945, 50, 377.

Clostridium tetanomorphum (Bullock et al.) Bergey et al.

- 3606 I.C. Hall, strain 149, Univ. of Colorado. 1928. J. Infect.
Dis., 1922, 30, 445.

Clostridium thermoaceticum Fontaine et al.

- 11821 H.A. Barker, Univ. of California, Berkeley. 1954. J. Bact.,
1942, 43, 705.

Clostridium thermosaccharolyticum McClung

- 7956 NCA, strain 3814 "Thermophilic anaerobe". 1941.

Clostridium tyrosinogenes (Hall) Bergey et al.

- 690 F.G. Reddish, strain 12, USDA. 1926. I.C. Hall strain 106.

Coccobacillus acidiurici Ulpiani

- 916 E.E. Ecker, Western Reserve Univ., Cleveland, Ohio. 1926.
J. Infect. Dis., 1924, 34, 592.

Corynebacterium acnes (Gilchrist) Eberson

- 6919, 6921, 6922 and 6923 NCTC, strains 737, 4311, 556 and 5235.
1938.

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Corynebacterium acnes (Continued)

- 11482 R.E. Hungate, strain B 330 B, State College of Washington. 1953. *Bact. Revs.*, 1950, 14, 3.
11827 H. Seeliger, strain Gerath, Hygiene-Institut der Universität Bonn, Venusberg, Germany. 1954. Prof. Lentze, Cologne.
11828 H. Seeliger, strain 417/52. 1954. Received as *Corynebacterium liquefaciens*. From subcutaneous abscess.

Corynebacterium bovis Bergey et al.

- 7715 Alice C. Evans, NIH. 1940.

Corynebacterium creatinovorans: See *Arthrobacter ureafaciens*

Corynebacterium diphtheriae (Flugge) Lehmann and Neumann

- 296 J.H. Mueller, strain Park 8, Harvard Univ. 1941. Connaught Labs., Toronto, Canada.
9015 (*Corynebacterium ulcerans*) Julia M. Coffey, strain 37142, New York State Dept. of Health. 1943. From throat.
9343 AMC, strain 53-A-1. 1947.
9456 Julia M. Coffey, strain 3203, New York State Dept. of Health. 1948. *J. Infect. Dis.*, 1934, 55, 123. Toxin production.
11913 Julia M. Coffey, strain 48255. 1954. Avirulent.

Type *gravis*

- 8028 H.E. Morton, strain 12, Univ. of Pennsylvania. 1941.
9059 and 9060 C.A. Perry, strains 40884 and 134, Dept. of Health, Baltimore, Md. 1943.
9674 AMC, strain 53-A-7. 1945.
11049 O. Felsenfeld, strain 19, Hektoen Inst. for Medical Research, Chicago, Ill. 1951.

Type *intermedius*

- 8032 Difco Laboratories, strain RD 121, Detroit, Mich. 1941.
M. Frobisher.
9675 AMC, strain 53-A-8. 1945.
11050 O. Felsenfeld, strain D14, Hektoen Inst., Chicago. 1951.

Type *mitis*

- 6928 NCTC, strain 3990. 1938. Univ. of Leeds strain 911.
8024 H.E. Morton, strain 7, Univ. of Pennsylvania. 1941. Natl. Drug Co.
8026 H.E. Morton, strain 9. 1941. Olga R. Povitsky, N.Y. City Board of Health.
9061 C.A. Perry, strain 20, Dept. of Health, Baltimore, Md. 1943.
9673 AMC, strain 53-A-11. 1945.
11051 O. Felsenfeld, strain D11, Hektoen Inst. Med. Res., Chicago, Ill. 1951.

Corynebacterium enzymicum (Mellon) Eberson

- 8155 and 8156 L.H. Schwarz, strains C-1 and C-1-a, Brooklyn College, Brooklyn, N.Y. 1941.

Corynebacterium equi Magnusson

- 6939 NCTC, strain 1621. 1938. H. Magnusson, Malmö, Sweden. Isolated from lung abscess in foal.
7698 and 7699 H.W. Schoening, strains S-11-L (No. 88A) and S-26-L (No. 89A), USDA. 1940.
10146 AMC, strain 87A-113. 1946. Isolated from lung of foal.

BACTERIA

Corynebacterium fascians (Tilford) Dowson

- 12974* W.H. Burkholder, strain CF17, Cornell Univ. 1957. P. E. Tilford, Ohio Expt. Sta. Trans. Brit. Mycol. Soc., 38, 49.
12975 W.H. Burkholder, strain CF19, Cornell Univ. 1957. Trans. Brit. Mycol. Soc., 38, 49.
13000 M.P. Starr, strain C.F. 107 (505), Univ. of Calif. 1957. S.E. Jacobs, Imperial College, London. Isolated from sweet pea.

Corynebacterium fimi (McBeth and Scales) Jensen: See Cellulomonas fimi

Corynebacterium flaccumfaciens (Hedges) Dowson (Phytomonas flaccumfaciens)

- 6887 NCTC, strain 4758. 1938. W.J. Dowson, Cambridge Univ. From bean blight.
7392 P.A. Ark, Univ. of Calif., Berkeley. 1938.

Corynebacterium flaccumfaciens var. aurantiacum

- 12813 M.L. Schuster, Univ. of Nebraska. 1957. Phytopath., 1957, 47, 51.

Corynebacterium flavidum Holland: See Corynebacterium striatum

Corynebacterium helvolum (Zimmermann) Kisskalt and Berend: See Brevibacterium helvolum

Corynebacterium hemolyticum MacLean, Liebow and Rosenberg

- 9345 A.A. Liebow, strain 11018, Yale Univ. 1947. J. Infect. Dis., 1946, 79, 69.

Corynebacterium histidinolovorans

- 11442 E. Adams, NIH. From soil. J. Biol. Chem., 1954, 209, 829.

Corynebacterium hoagii (Morse) Eberson

- 7005 F.S. Orcutt, Virginia Polytech. Inst., Blacksburg. 1938.

Corynebacterium insidiosum (McCulloch) Jensen

- 10253 W.H. Burkholder, Cornell Univ. 1947.

Corynebacterium liquefaciens Prévot: See Corynebacterium acnes

Corynebacterium michiganense (Erw. Smith) Jensen

- 492 L.A. Rogers, USDA. 1925. From tomato.
4450 R.E. Buchanan, Iowa State College. 1929.
7429, 7430 and 7433 P.A. Ark, Univ. of California, Berkeley. 1939. Strains from tomato stem canker, Cyphomandra fragrans, and Earliana tomato, respectively.
10202 P.A. Ark, strain White. 1946. J. Bact., 1946, 51, 699. Virulent for Bonny Best tomato.

Corynebacterium mycetoides (Castellani) Ortali and Capocaccia

- 10754 A. Castellani, strain 2, Inst. de Med. Trop., Lisbon, Portugal. 1949. Received as Micrococcus mycetoides. J. Trop. Med. and Hyg., 1948, 51, 245.

Corynebacterium nephridii Büsing et al.

- 11425 E.V. Morse, Univ. of Wisconsin. 1953.

Corynebacterium parvum Prévot

- 11529 H. Seeliger, Hygiene-Inst. der Univ. Bonn, Venusberg, Germany. 1954. Prof. Prévot.

- 12930 and 12931 H. Seeliger, strains 643-C and 936-D. 1957.

Corynebacterium paucometabolum Steinhaus

- 8598 F.A. Steinhaus, NIH. Rocky Mountain Lab., Hamilton, Montana. 1942. J. Bact., 1941, 42, 757.

BACTERIA

Corynebacterium poinsettiae Starr and Pirone

9069 and 9070 W.H. Burkholder, strains CP21 and CP1, Cornell Univ. 1943.

9682 M.P. Starr, strain CP2, Hopkins Marine Sta., Pacific Grove, Calif. 1945. *Phytopath.*, 1942, 32, 1076.

Corynebacterium pseudodiphtheriticum Lehmann and Neumann

3981 NCTC, strain 1929A. 1938. *J. Hyg.*, 1924, 23, 241.

10700 and 10701 Julia M. Coffey, strains 153 and 39555, New York State Dept. of Health. 1949.

Corynebacterium pseudotuberculosis (Buchanan) Eberson

809 J.S. Buckley, USDA. 1926. From sheep lung.

8666 F.A. Humphreys, strain A, Dept. Pensions and Natl. Health, Kamloops, B.C., Canada. 1942. *Canadian J. Comp. Med.*, Feb., 1942.

Corynebacterium pyogenes (Glage) Eberson

8104 Jensen-Salsbury Labs., Inc., Kansas City, Mo., strain 3-25. 1941. From bovine mastitis.

8104 and 8105 Jean Ferguson, strains C2418 and C2429 (bovine), New York State Vet. Coll., Ithaca. 1941. Cornell Vet., 1940, 30, 299.

9730, 9731 and 9732 Jensen-Salsbury Labs., Inc., strains (bovine) 3-18, 3-33 and 3-42, Kansas City, Mo. 1945.

9733 Jensen-Salsbury Labs., Inc., strain 3-23 (porcine). 1945.

Corynebacterium renale (Migula) Ernst

10848, 10849 and 10850 E.V. Morse, strains 5, 9 and 10, Univ. of Wisconsin. 1951. From cattle with pyelonephritis.

Corynebacterium sepedonicum (Speckermann and Kotthoff) Skaptason and Burkholder

9850 W.H. Burkholder, strain CS5, Cornell Univ. 1945.

Corynebacterium simplex Jensen: See *Arthrobacter simplex*

Corynebacterium striatum. (Chester) Eberson

6940 (*Corynebacterium flavidum*) NCTC, strain 764. 1938. F.C. Minett.

Corynebacterium tritici (Hutchinson) Burkholder

11402 and 11403 M.P. Starr, strains CT101 and CT102, Univ. of Calif., Davis. 1952. Strains A (Indian isolate) and B (Egyptian isolate) from R.S. Vasudeva. Motile.

Corynebacterium tumescens Jensen: See *Arthrobacter tumescens*

Corynebacterium ulcerans Gilbert and Stewart: See *Corynebacterium diphtheriae*

Corynebacterium vesiculare Büsing et al.

11426 E.V. Morse, Univ. of Wisconsin, via G.J. Jann. 1953.

Corynebacterium xerosis Lehmann and Neumann

373 J.G. Fitzgerald, Univ. of Toronto, Canada. 1925. From human ear discharge.

7094 New York State Dept. of Health, Albany, strain 155. 1938. From human throat.

7711 University of Maryland. 1940.

9016 Julia M. Coffey, strain 39165, New York State Dept. of Health. 1943. From throat.

BACTERIA

Corynebacterium spp.

- 184 NCTC, strain 7510. 1950. Received as *Micrococcus rhodochrous*.
6931, 6933, 6935 and 6936 NCTC, strains 1914, 1918, 1922 and 1924 (M. M. Barratt's types III, V, VI and VII respectively). 1938. J. Hyg., 1924, 23, 241.
6937, 6938 and 6980 NCTC, strains 1926, 1928 and 1929 (M. M. Barratt's types VIII, IX and X respectively.) 1938. J. Hyg., 1924, 23, 241.
7762 I. Davidsohn, "Corynebacterium H", Mt. Sinai Hospital, Chicago, Ill. 1940. Proc. Linnean Soc. of N.S. Wales, 1934, 59, 19.
8184 L. D. Bushnell, strain X, Kansas State College. 1941. Trans. Kansas Acad. Sci., 1941, 44, 39.
9736, 9737 and 9738 Jensen-Salsbury Labs., Inc., strains 3-49, 3-50 and 3-34, Kansas City, Mo. 1945. Received as *Corynebacterium pseudodiphthericum*. From ovine pneumonia.
9739, 9740 and 9741 Jensen-Salsbury Labs., Inc., strains 3-30, 3-43 and 3-44. 1945. Received as *Corynebacterium pseudo-diphthericum*. From bovine pneumonia.
9742, 9743 and 9744 Jensen-Salsbury Labs., Inc., strains 3-45, 3-46 and 3-47. 1945. Received as *Corynebacterium pseudo-diphthericum*. From porcine pneumonia.
11035 H. Friedlander, strain MT-9, NIH. 1951. From subcutaneous abscess of white mouse.
11036 H. Friedlander, strain RT-3. 1951. From throat culture of white rat.
Cytophaga aurantiaca Winogradsky
12208 NCIB, strain 8628. 1957.
Cytophaga fermentans Bachmann
12470 B.J. Bachmann, strain MX.1.1, Univ. of Calif., Berkeley. 1956. J. Gen. Microbiol., 13, 541.
Cytophaga myxococcoides: See *Sporocytophaga myxococcoides*

Desulfovibrio desulfuricans (Beijerinck) Kluyver and van Niel

- 7757 (*Spirillum desulfuricans*) R. L. Starkey, strain C-6, New Jersey Agric. Expt. Sta. 1943. Arch. f. Mikrobiol., 1938, 9, 268.

Diplococcus pneumoniae Weichselbaum

- Types 1 to 32
6301 to 6332 Bernice E. Eddy, NIH. 1947. U.S. Pub. Health Repts., 1944, 59, 449.
Types 33 to 40
8333 to 8340 Bernice E. Eddy, NIH. 1947. U.S. Pub. Health Repts., 1944, 59, 449.
Types 41 to 59
10341 to 10359 Bernice E. Eddy, NIH. 1947. U.S. Pub. Health Repts., 1944, 59, 449.

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Diplococcus pneumoniae (Continued)

Types 61 to 73

10361 to 10373 Bernice E. Eddy, NIH. 1947. U.S. Pub. Health Repts., 1944, 59, 449.

Miscellaneous types

10813 L. H. Schmidt, CHA strain (Type 3), Christ Hospital, Cincinnati. 1950. J. Bact., 1944, 47, 509.

11733 Bernice E. Eddy, strain R36A, NIH. 1954. Rough phase, derived from Type 2. Production of C polysaccharide.

12213 C. M. MacLeod, strain I-192R, New York Univ. College of Med. 1955. Rough phase, derived from Type 1. Production of C polysaccharide.

Types not specified

9163 Bernice E. Eddy, strain DRI, NIH. 1947. Rough phase.

10015 R. J. Dubos, strain SVI, Rockefeller Inst. 1946.

Eberthella alcalifaciens de Salles Gomes

9886 L. de Salles Gomes, Brazil, through R. E. Buchanan. 1945. From feces. Revista de Instituto Adolfo Lutz, 1944, 4, 182.

Erwinia amylovora (Burrill) Winslow et al.

7398, 7400 and 7401 P.A. Ark, Univ. of California, Berkeley. 1938. From Pyrus communis, Photinia arbutifolia and Pyracantha angustifolia, respectively.

Erwinia ananas Serrano

11530 M.A. Smith, strain 4294, USDA. 1953.

Erwinia aroideae (Townsend) Holland

12286 and 12312 W.H. Burkholder, strains SR23 and SR31, Cornell Univ. 1955.

Erwinia atroseptica (van Hall) Jennison

494 L.A. Rogers, USDA. 1925. Lucia McCulloch. From calla lily soft rot.

496 L.A. Rogers. 1925. O. Appel, Berlin, Germany.

4446 R.E. Buchanan, Iowa State College. 1929. Nellie A. Brown through M.K. Patel. Produces potato rot.

7403 and 7404 P.A. Ark, Univ. of California, Berkeley. 1938. From Delphinium ajacis, and early white bush scallop squash, respectively.

11773 C. May, USDA. 1954. W.C. Bryan, U.S. Forest Service, Tucson, Arizona. Isolated from Cereus giganteus.

Erwinia carotovora (Jones) Holland

138 AMC. 1925.

495 L.A. Rogers, USDA. 1925. L.R. Jones, Madison, Wisconsin. From soft rot of carrot.

8061 P.A. Ark, Univ. of California, Berkeley. 1941. C. Stapp. From rot of potato tuber.

Erwinia chrysanthemi Burkholder et al.

11662 and 11663 W.H. Burkholder, strains 16 and 17, Cornell Univ. 1953. Phytopath., 1953, 43, 522.

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Erwinia nimipressuralis Carter

9912 J.C. Carter, strain 41-173, Urbana, Illinois. 1945. Elm parasite. Illinois Nat. Hist. Surv. Bull., 1945, 23, Art. 4.

Erwinia tracheiphila (Erw. Smith) Holland

11417 W.H. Burkholder, strain ET6, Cornell Univ. 1953.

Erysipelothrix insidiosa (Trevisan) Langford and Hansen (Erysipelothrix rhusiopathiae)

805 J.S. Buckley, USDA. 1926. From case of swine erysipelas.

8139 H.W. Schoening, strain S-1, USDA. 1941.

10734 and 10735 R.R. Henley, strains M₃LP₃ and 422-1, USDA. 1949.

11916 and 11917 A.M. Lee, strains P-3 and SE830, USDA. 1954.

Porcine strains.

Erysipelothrix rhusiopathiae (Migula) Winslow et al.: See Erysipelothrix insidiosa

Escherichia acidilactici Bergey et al.: See Escherichia coli var. acidilactici

Escherichia anaerogenes Bergey et al.

6878 NCTC, strain 1677. 1938.

Escherichia anindolica Bergey et al.

6879 NCTC, strain 4143. 1938. Iowa State Coll. strain 104. J. Bact., 1933, 25, 461.

Escherichia aurescens (Parr) Malligo et al.

12814 L.W. Parr, George Washington Univ. 1957. J. Bact., 1955, 70, 498.

Escherichia coli (Migula) Castellani and Chalmers

26 AMC. 1925.

4157 NCTC, strain 86. 1927. Original strain isolated by Escherich in 1886.

4656 and 4657 E.G. Hastings, Univ. of Wisconsin. 1930. Types R and S.

6880, 6881, 6882 and 6883 NCTC strains 844, 846, 848 and 1715. MacConkey's Groups I, II, III and IV. J. Path. Bact., 1921, 24, 192.

8329 A.H. Eggerth, strain Woo, Long Island Coll. of Med. 1942.

8330 A.H. Eggerth, strain Sta. 1942.

8739 I.C. Gunsalus, strain Crookes, Cornell Univ. 1942. J. Biol. Chem., 1941, 141, 853.

9637 S.A. Waksman. 1944. Agric. Expt. Sta., New Brunswick, N.J. Streptomycin and Streptothricin assay.

9661, 9662 and 9663 J.O. Lampen, strains 1572-228, 1250-228 and 532-171, American Cyanamid Co., Stamford, Conn. 1944. J. Bact., 1944, 48, 401. Amino acids assays.

9723 R.R. Roepke, strain 15, American Cyanamid Co. 1945. J. Bact., 1944, 48, 401. Parent strain of the following mutants:

9723a R.R. Roepke, strain 273-384. 1946. Requires p-aminobenzoic acid. J. Biol. Chem., 1946, 164, 789.

9723b R.R. Roepke, strain 303-138. 1945. Requires nicotinamide or nicotinic acid.

9723c R.R. Roepke, strain 754T-171. 1945. Requires thiamine.

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Escherichia coli (Continued)

- 9723d R.R. Roepke, strain 558-228. 1945. Requires threonine.
- 9723e R.R. Roepke, strain 403-230. 1945. Requires glycine or serine.
- 9723f R.R. Roepke, strain 632-460. 1953. Requires phenylalanine.
- 9723g R.R. Roepke, strain 550-460. 1953. Requires uracil, cytosine, or isocytosine.
- 9723h R.R. Roepke, strain 70-462. 1952. Requires thymine.
- 10053 G.F. Luippold, strain 5396/38, AMC. 1946. For Vi antigen.
- 10536 P.G. Stansly, MacLeod strain, American Cyanamid Co., Stamford, Conn. 1948. PCI strain 540. J. Bact., 1947, 54, 549. Assay of polymyxin.
- 10586 A.L. Caldwell, Shive-Texas strain, Eli Lilly Co. 1949.
- 10787 NCTC, strain 7020. 1950. E.F. Gale.
- 10795 H.C. Lichstein, strain Gratia, Univ. of Tennessee. 1950. J. Biol. Chem., 1949, p.177.
- 10799 NCIB, strain 8134. 1950.
- 11097 C.H. Werkman, strain E26, Iowa State College. 1951.
- 11105 P.R. Burkholder, strain 113-3 Davis, Yale Univ. 1951.
- 11143 M. Demerec, strain Sd-4 (streptomycin dependent), CIW. 1952. Genetics, 1951, 36, 585. Derived from B/r strain.
- 11229 AMC, strain 198 (U.S. Pub. Health Service). 1952.
- 11246 V.A. Najjar, Johns Hopkins Hospital, Baltimore, Md. 1952. Fed. Proc., 1952, 11, 264.
- 11370 W.A. Randall, strain PCI 533, FDA. 1952. Streptomycin resistant.
- 11698 W.W. Ferguson, strain 18027, Michigan State Dept. Health, Lansing. 1953. Alpha type.
- 11699 W.W. Ferguson, strain 18027a. 1953. Beta type.
- 11770 B.D. Davis, strain M83-5, U.S. Public Health Service, Tuberculosis Research Lab., N.Y. City. 1953.
- 11775 NCTC, strain 9001. 1954.
- 11776 NCTC, strain 9002. 1954.
- 11839 CDC. Serotype O group 28. 1954.
- 11840 AMC. 1956. Serotype O group 26.
- 11887 A. Goldstein, strain Harvard, Harvard Medical School. 1954.
- 12014 and 12015 CDC, strains 5624-50 and 585-52. 1955.
- (Additional serotypes of *Escherichia coli* are available.)
- Escherichia coli var. acidilactici (Topley and Wilson) Yale
128 (*Escherichia acidilactici*) AMC. 1925.
- Escherichia coli var. communior (Topley and Wilson) Yale
(*Escherichia communior*)
- 4163 J.S. Buckley, strain 49, USDA. 1927.
- 4346 and 4347 Elizabeth C. Robertson, strains RO2b and RO11ph, Connaught Labs., Toronto, Canada. 1928.
- 6521 H.W. Schoening, strain 73-A, USDA. 1938.
- 7009 F.S. Orcutt, strain F, Virginia Polytech. Inst., Blacksburg. 1938.
- 7010 and 7011 F.S. Orcutt, strains D and E. 1938.

BACTERIA

Escherichia coli var. communior (Continued)

10740 F. Stimpert, strain 04655, Parke, Davis and Co., Detroit, Mich. 1949. Also identified as strain 3583Q2.

Escherichia coli var. neapolitana (Topley and Wilson) Yale
(Escherichia neapolitana)

133 AMC. 1925.

6894 NCTC, strain 4139. 1938. Iowa State Coll. strain 56. J. Bact., 1938, 25, 461.

Escherichia coli mutabilis Castellani and Chalmers

9980 K.N. Atkins, strain 319 W, Dartmouth Med. School. 1946.

Escherichia communior Bergey et al.: See Escherichia coli var. communior

Escherichia freundii (Braak) Yale

8090 C.H. Werkman, Iowa State Coll. 1941.

8454 NCTC, strain 3735. 1942. A.J. Kluyver. J. Bact., 1932, 23, 167.

12012 (Ballerup group) W.H. Ewing, CDC. 1955. Vi-W.

Escherichia intermedia (Werkman and Gillen) Vaughn and Levine

6750 C.H. Werkman, strain M8BK, Iowa State Coll. 1938. J. Bact., 1932, 23, 167.

Escherichia neapolitana Castellani and Chalmers: See Escherichia coli var. neapolitana

Escherichia paragrueenthali Castellani and Chalmers

6895 NCTC, strain 4742. 1938. From ice cream.

Escherichia pseudocolooides (Castellani) Castellani and Chalmers

6901 NCTC, strain 4740. 1938.

Escherichia vekanda Bergey et al.

964 M. Levine, strain 2039, Iowa State Coll. 1926. From creamery waste.

Escherichia spp. ("Alkalescens-Dispar Group")

Group O1

8763 O. Felsenfeld, Manteno State Hospital, Manteno, Illinois. 1942. Received as Shigella alkalescens.

9339 AMC, strain 43-654. 1944. Received as Shigella alkalescens.

9581 O. Felsenfeld, strain EC152, Chicago Medical School. 1944. Received as Shigella alkalescens. From dysentery patient.

Group O2

12041 CDC, strain A-193. 1955.

Group O3

12042 CDC, strain S-167. 1955.

Group O4

12043 CDC, strain S-171. 1955.

Escherichia spp.

9240 and 9242 O. Felsenfeld, strains D799 and D120, Dept. Pub. Welfare, Chicago. 1943. Paracolon organisms with partial antigens of the Salmonella Group VI-VII. From stools of Salmonella montevideo carrier.

9492 A.P. Stewart, Golden State Co., Ltd. San Francisco, Calif. 1944. Production of ascorbic acid.

Eubacterium limosus (Eggerth) Prévet

8486 (Bacteroides limosum) A.H. Eggerth, Long Island Coll. of Med. 1942. J. Bact., 1935, 30, 277.

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- Flavobacterium acetylicum Levine and Soppeland: See Brevibacterium acetylicum
- Flavobacterium acidificum Steinhaus
- 8366 E.A. Steinhaus, NIH, Rocky Mountain Lab., Hamilton, Montana. 1942. J. Bact., 1941, 42, 757.
- Flavobacterium aquatile (Frankland and Frankland) Bergey et al.
- 11947* O.B. Weeks, strain Taylor F36, Univ. of Idaho. 1954.
- Flavobacterium arborescens (Frankland and Frankland) Bergey et al.
- 4358 A. Stewart, Florida State College for Women. 1928.
- Flavobacterium devorans (Zimmermann) Bergey et al.
- 10829 NRRL, strain B-54. 1950. F.J. de Fontenoy; N. Porges. Bact. Proc., 1950, p. 21.
- Flavobacterium esteroaromaticum (Omelianski) Bergey et al.
- 8091 C.P. Hegarty, Georgetown Univ., School of Med. 1941.
- Flavobacterium flavescent (Pohl) Bergey et al.
- 8315 C. Darling, strain 72, Allegheny College, Meadville, Pa. 1941. J. Bact., 1941, 42, 83.
- Flavobacterium odoratum
- 4651 D.H. Bergey, Univ. of Pennsylvania. 1930. M. Stutzer. Zblt. Bakt. Abt. I. Orig., 1929, 102, 113.
- Flavobacterium proteus Shimwell and Grimes
- 12841 NCIB, strain 8771 (strain 42). 1957. Shaefer Brewing Co., Brooklyn, N.Y. Wallerstein Lab. Com., 1955, 18, 275.
- Flavobacterium resinovorum Delaporte and Daste
- 12524 P. Daste, Univ. de Paris. 1956. Compt. Rend. Acad. Sci., 1956, 242, 831.
- Flavobacterium suaveolens Soppeland
- 958 M. Levine, strain 1045 (1), Iowa State Coll. 1926. From creamery waste.
- Flavobacterium synxanthum Bergey et al.: See Pseudomonas synxantha
- Flavobacterium vitarumen Knutson: See Brevibacterium vitarumen
- Fusobacterium polymorphum Knorr
- 10953 H. Pittman, Ohio State Univ., 1951. Ohio J. Science, 1955, 53, 141.
- Gaffkya hornari Hitchner and Snieszko
- 10400* E.R. Hitchner, Univ. of Maine. 1948. J. Bact., 1947, 54, 47.
- Gaffkya tetragena (Gaffky) Trevisan
- 10875 A. Abrams, strain 16-A-2, AMC. 1951.
- Haemophilus aegyptius (Trevisan) Pittman and Davis
- 11116 Margaret Pittman, strain 180-a, NIH. 1951.
- Haemophilus ducreyi (Neveu-Lemaire) Bergey et al.
- 9975 A. Abrams, strain 36-F-1, AMC. 1954.
- 11422 Julia M. Coffey, strain 4987, New York State Dept. of Health. 1953. Ellison strain.
- Haemophilus gallinarum (Delaplane et al.) Eliot and Lewis
- 12082 W.J. Hall, strain 4570, USDA. 1955.

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Haemophilus haemolyticus Bergey et al.

10014 Margaret Pittman, strain 536, NIH. 1946.

Haemophilus influenzae (Lehmann and Neumann) Winslow et al.

8149 Margaret Pittman, strain 579, NIH. 1941. From eye.

9131, 9132 and 9133 W. Gingrich, strains SPV, O and T, Univ. of Texas. 1943.

9333 Margaret Pittman, strain 525, NIH. 1947. From spinal fluid.

Type a

9006 Margaret Pittman, strain 610, NIH. 1945.

9327 Margaret Pittman, strain 620, NIH. 1947. From spinal fluid. J. Bact., 1943, 44, 620.

Type b

9334 Margaret Pittman, strain 576, NIH. 1947. From spinal fluid. U.S. Pub. Health Repts., 1946, 61, 768.

9795 Margaret Pittman, strain 641, NIH. 1945.

10211 AMC, strain 36-A-1. 1947. Margaret Pittman strain 572.

Type c

9007 Margaret Pittman, strain 624, NIH. 1945.

Type d

9008 Margaret Pittman, strain 611, NIH. 1945.

9332 Margaret Pittman, strain 522, NIH. 1945. D. Mulder; J. van Lookeren. Also described as type d2 or g. J. Bact., 1947, 53, 449.

Type e

8142 Margaret Pittman, strain 595, NIH. 1945.

Type f

9833 Margaret Pittman, strain 644, NIH. 1945.

Haemophilus parainfluenzae Rivers

7901 Margaret Pittman, strain 429, NIH. 1940. U.S. Pub. Health Repts., 1940, 55, 915.

9796 Margaret Pittman, strain 655, NIH. 1950.

Haemophilus piscium Snieszko et al.

10801 S.F. Snieszko, strain 16, U.S. Fish and Wildlife Ser., Kearneysville, W. Va. 1957. J. Bact., 1950, 59, 699.

Hemophilus parapertussis Eldering and Kendrick : See Bordetella parapertussis

Hemophilus pertussis Holland: See Bordetella pertussis

Herellea spp.

9955 and 9956 W.E. Deacon, strains 6-561 and 5-156A, Dept. Pub. Health, Lincoln, Neb. 1946. J. Bact., 1945, 49, 511.

11959 J.P. Gilman, Highland View Hospital, Cleveland, Ohio. 1954. From case of fulminating septicemia.

Hydrogenomonas facilis Schatz and Bovell

11228 A. Schatz, Brooklyn College, Brooklyn, N.Y. 1952. J. Bact., 1952, 63, 87.

Jensenia canicruria Bisset and Moore

11048* NCTC, strain 8036. 1951. J. Gen. Microbiol., 1950, 4, 280.

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<u><i>Klebsiella ozaenae</i> (Abel) Bergey et al. (See also <i>Klebsiella pneumoniae</i>)</u>	
8408, 8409 and 8410 F. E. Colien, strains 397, 401 and 418.	
Creighton Univ. School of Med., Omaha, Nebraska. 1942.	
Král-Pribram Collection.	
<u><i>Klebsiella pneumoniae</i> (Schroeter) Trevisan</u>	
132	AMC. 1925.
9590 and 9591	W. A. Randall (penicillin sensitive and penicillin resistant strains, respectively), FDA. 1944.
9997	R. Donovick, Squibb Inst. for Med. Res., New Brunswick, N.J. 1946. J. Bact., 1945, <u>50</u> , 623. Antibiotic assay.
10031	FDA, strain PCI 602. 1946. Streptomycin assay.
Type A	
4208	L.A. Julianelle, strain Sc, Rockefeller Inst. Hospital. 1927. J. Exptl. Med., 1926, <u>44</u> , 113.
4368	W. W. Beattie, strain 35784, McGill Univ., Montreal, 1928.
6540	G. J. M. Bullowa, strain Wright, Harlem Hospital, New York City. 1938.
8044, 8045, 8046 and 8047	Sara A. Scudder, strains 12394 C.L., 55280 O.L., 54705 M.Y. and 9008 G.R., City Hospital, Welfare Island, N.Y. 1941.
8048, 8049 and 8050	Sara A. Scudder, strains 6905 H.Y., 12595 W.L. and 7201 H.Y. 1941.
Type B	
4727	H. Schlossberger, Reichsgesundheitsamt, Berlin. 1931. From beaver.
7380	L.A. Julianelle, Washington Univ. Med. School, St. Louis, Mo. 1938.
8052	Sara A. Scudder, strain 11094 TI, City Hospital, Welfare Island, N.Y. 1941.
10872	AMC, strain 35-A-2. 1951. Julianelle strain EGS.
Type C	
10273	AMC, strain 35-A-3. 1948.
Type D	
11296	AMC, strain 35-E-5. 1952. Received as <i>Klebsiella ozaenae</i> . NCTC strain 5050.
Type E	
11297	AMC, strain 35-E-6. 1952. Received as <i>Klebsiella ozaenae</i> . NCTC strain 5051.
Type F	
11298	AMC, strain 35-E-4. 1952. Received as <i>Klebsiella ozaenae</i> . NCTC strain 5052.
<u><i>Klebsiella rhinoscleromatis</i> Trevisan</u>	
6908	NCTC, strain 1936. 1938. E.P. Snijders, Amsterdam. From rhinoscleroma case. Trans. 4th Congress Far East. Assn. Trop. Med., <u>2</u> , 296.
9436	A. Muggia, Regia Universita di Torino, Quito, Ecuador. 1947.
<u><i>Kurthia zopfii</i> (Kurth) Trevisan (Bacterium zopfii)</u>	
6900	NCTC, strain 405. 1938. L.F. Rettger, Univ. of Chicago. J. Bact., 1919, <u>4</u> , 331.
10538	NCTC, strain 404. 1948. L.F. Rettger, Yale, Univ.

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Lactobacillus acidophilus (Moro) Holland

- 314 E.O. Jordan, Univ. of Chicago. 1925. L.F. Rettger strain 43.
332 L.A. Rogers, USDA. 1925. L.F. Rettger.
832 L.F. Rettger, strain 4B (murine), Yale Univ. 1926.
4355, 4356 and 4357 W.L. Kulp, strains R-1-1 (murine), Scav. and Pak. (human), Yale Univ. 1928.
4796 E.B. Fred, strain L. d. 4, Univ. of Wisconsin. 1932.
4913 E.B. Fred, strain L. d. 3, Univ. of Wisconsin. 1933.
Pribram Collection. Assay of amino acids.
4962 and 4963 L.F. Rettger, strains 3 and 5, Yale Univ. 1935.
Received as Lactobacillus bifidus.
9857 NCTC, strain 2948. 1945. R. Cruickshank strain B. 3.
J. Hyg., Cambridge, 1935, 24, 241.
11506 E. Hoff-Jørgensen, strain R-26, Univ. of Copenhagen. 1955.
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Lactobacillus arabinosus Fred, Peterson and Anderson: See

Lactobacillus plantarum

Lactobacillus bifidus (Tissier) Holland

- 11146 and 11147 G. Malyoth, Univ. of Munich. 1951. Zeit. f. Kinderheil., 1950, 68, 358.
11617 Mary S. Shorb, strain VT3 (turkey), Univ. of Maryland. 1953.
Assay of unidentified growth factor in feedstuffs for chickens. Abstracts, Poultry Sci. Assoc., Vancouver, B.C., Aug. 1953.
11618 Mary S. Shorb, strain C31 (chicken), Univ. of Maryland. 1953.
Lactobacillus bifidus var. pennsylvanicus György

P. György, strain 212A, Univ. of Pennsylvania. 1954. Re-

quires growth factor in human milk. J. Bact., 1955, 69, 483.

Lactobacillus brevis (Orla-Jensen) Bergey et al.

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bacillus pentoaceticus. J. Biol. Chem., 1919, 39, 347.
4006 C.S. Pederson, New York Agric. Expt. Sta. 1927.
W. Henneberg. Zblt. Bakt., II Abt., 1903, 11, 167.
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11577 Evelyn B. Tilden, Northwestern Univ. 1953. From oral
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Lactobacillus buchneri (Henneberg) Bergey et al.

- 4005 C.S. Pederson, New York Agric. Expt. Sta. 1941. F. L.
Mickle, N.Y. Agric. Expt. Sta. Tech. Bull. 110, 1925.
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1947, 169, 1.
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cavity. J. Dental Res., 1952, 31, 831.

Lactobacillus bulgaricus (Luerssen and Kühn) Holland

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Metchnikoff strain.
7993, 7994 and 7995 L.A. Rogers, USDA. 1940. J.M. Sherman
strains FN, B and 5.
8001 and 9224 M. Rogosa, USDA. 1941 and 1943.

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Lactobacillus bulgaricus (Continued)

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 11842 P. A. Hansen, Univ. of Maryland. 1954. Orla-Jensen strain 14. Produces l-lactic acid.
 11977 NCIB, strain 76. 1954.

Lactobacillus casei (Orla-Jensen) Holland

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 393 (Streptobacterium casei) G. J. Hucker, strain 03, New York Agric. Expt. Sta. 1925. Orla-Jensen strain 7.
 4007 C. S. Pederson, New York Agric. Expt. Sta. 1927. J. C. Torrey strain M. J. Infect. Dis., 1915, 17, 437.
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Lactobacillus casei var. rhamnosus Rogosa

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Lactobacillus cellobiosus Rogosa et al.

- 11739 and 11740 M. Rogosa, strains 19LC3 and 557, NIH. 1954. J. Bact., 1953, 65, 681.

Lactobacillus delbrueckii (Leichmann) Beijerinck

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 11443 M. Brin, New England Deaconess Hosp., Boston, Mass. 1953. Arch. Biochem. and Biophys., 1952, 39, 214.
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 11979 NCIB, strain 7473. 1954. M. B. Brown. J. Biol. Chem., 1945, 157, 651.

Lactobacillus fermenti Beijerinck

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Lactobacillus frigidus Bhandari and Walker

- 11307 NCIB, strain 8518. 1952. T. K. Walker. From beer.

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Lactobacillus fructivorans Charlton, Nelson and Werkman

8288 R. H. Vaughn, Univ. of California, Berkeley. 1941. C. S. Pederson.

Lactobacillus helveticus (Orla-Jensen) Holland

8018 C. S. Pederson, New York Agric. Expt. Sta. 1941. S. Orla-Jensen. NCIB strain 8025.

10386 R. P. Tittsler, strain V76, USDA. 1948. W. Dorner.

10797 R. P. Tittsler, strain V80, USDA. 1950. Swiss cheese starter.

12046 E. E. Snell, strain H-80, Univ. of Texas. 1955. Assay of pantethine. J. Bact., 1950, 60, 49.

Lactobacillus hilgardii Douglas and Cruess

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Lactobacillus lactis (Orla-Jensen) Holland

8000 M. Rogosa, USDA. 1941. W. Dorner. Assay of vitamin B₁₂. J. Biol. Chem., 1948, 176, 1463.

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11983 NCIB, strain 8011. 1954.

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12315 P. A. Hansen, strain L 1 10, Univ. of Maryland. 1955. Co-type culture from Orla-Jensen's laboratory.

Lactobacillus leichmannii Bergey et al.

4797 R. P. Tittsler, strain 326, USDA. 1948. E. B. Fred strain F 59. Assay of vitamin B₁₂.

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Lactobacillus malefermentans Russell and Walker

11306 NCIB, strain 8517. 1952. T. K. Walker. From beer.

Lactobacillus parvus Russell and Walker

11305 NCIB, strain 8516. 1952. T. K. Walker. From beer.

Lactobacillus pastorianus (van Laer) Bergey et al.

8291 R. H. Vaughn, Univ. of California, Berkeley. 1941. NCTC strain 4955. J. M. Shimwell. From beer.

Lactobacillus pentosus Fred, Peterson and Anderson: See Lactobacillus plantarum

Lactobacillus plantarum (Orla-Jensen) Holland

4008 C. S. Pederson, New York Agric. Expt. Sta. 1928. J. C. Torrey strain B. J. Infect. Dis., 1915, 17, 437.

8014 (Lactobacillus arabinosus) Elizabeth McCoy, strain 17-5, Univ. of Wisconsin. 1941. Assay of biotin, and nicotinic and p-aminobenzoic acids.

8041 (Lactobacillus pentosus) E. E. Snell, strain 124-2, Univ. of Texas. 1941. J. Bact., 1948, 55, 683.

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Lactobacillus plantarum (Continued)

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- 10012 J. Alsberg, strain 10S, U. S. Dept. of Commerce. 1946. R. Kuhn. Assay of p-aminobenzoic acid. Ber. Deutsch. Chem. Ges., 1941, 74, 1617.
- 10241 Marjory Stephenson, Univ. of Cambridge. 1947. NCIB strain 7220. Production of acetyl choline.
- 10776 R.P. Tittsler, strain 324, USDA. 1950. E.B. Fred strain 102.
- 11580 Evelyn B. Tilden, Northwestern Univ. 1953. From oral cavity. J. Dental Res., 1952, 31, 831.

Lactobacillus salivarius var. salicinius Rogosa et al.

- 11742 M. Rogosa, strain HO268, NIH. 1954. J. Bact., 1953, 65, 681.

Lactobacillus salivarius var. salivarius Rogosa et al.

- 11741* M. Rogosa, strain HO66, NIH. 1954. J. Bact., 1953, 65, 681.

Lactobacillus thermophilus Ayers and Johnson

- 8317 NCIB, strain 8119. 1954. M.L. Speck.

Lactobacillus viridescens Niven and Evans

- 12706* J.B. Evans, strain S38A, Univ. of Chicago. 1956. J. Bact., 1957, 73, 758.

Lactobacillus spp.

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- 10746 NRRL, strain B-1042. 1949. E.E. Snell strain L.d.5.

Lampropedia hyalina (Ehrenberg) Schroeter

- 11041 E.G. Pringsheim, Univ. of Cambridge, England. 1951.

Leptotrichia buccalis (Robin) Trevisan

- 12835 S.A. Zahler, strain 4, Univ. of Washington, Seattle. 1957. From human mouth. J. Bact., 1957, 73, 386.

Leuconostoc citrovorum (Hammer) Hucker and Pederson

- 8082 B.W. Hammer, strain 146, Iowa State College. 1941.

Leuconostoc mesenteroides (Cienkowski) van Tieghem

- 8042 See Streptococcus spp.

- 8293 R.H. Vaughn, strain 37Y, Univ. of California, Berkeley. 1941. McCleskey's Type F. See Use Section.

- 8357 J.A. Alford, Louisiana State Univ. 1942. McCleskey's Type F.

- 9135 W. Gingrich, strain 535, Univ. of Texas. 1943. Requires thiamine, calcium pantothenate and nicotinic acid.

- 10100 See Streptococcus spp.

- 10830a NRRL, strain B-512F. 1955. Production of dextran.

- 10877 C.S. McCleskey, strain 152-A, Louisiana State Univ. 1951.

- 10878, 10879 and 10880 C.S. McCleskey, strains 1025-A, 158-B and 719-B. 1951.

- 10881, 10882 and 10883 C.S. McCleskey, strains 548-D, 101-F and 860-F. 1951.

- 11449 NRRL, strain B-1299. 1953. J. Amer. Chem. Soc., 1952, 74, 5339.

- 12291 R.D. DeMoss, strain 39, Johns Hopkins Univ. 1955.

- 12697 See Streptococcus spp.

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Leuothrix cohaerens

12870 E.G. Pringsheim, strain Y, Pflanzenphysiol. Inst.,
Göttingen, Germany, 1957.

Leuothrix mucor Oersted

12869 E.G. Pringsheim, strain X, 1957.

Lineola longa Pringsheim

12905 E.G. Pringsheim, strain Göttingen, Pflanzenphysiol. Inst.,
Göttingen, Germany, 1957.

Listeria monocytogenes (Murray et al.) Pirie

984 J.H.H. Pirie, South African Inst. Med. Res., Johannesburg,
1927. Type I.

4428 Katherine Howell, Michael Reese Hospital, Chicago. 1929.
E.G.D. Murray, Cambridge Univ. J. Path. and Bact., 1926,
29, 407.

7302 Stanford University. 1938.

7644 M.J. Pelczar, Jr., strain Gibson, State Univ. of Iowa, Coll.
of Med. 1939. R.A. Webb and M. Barber. J. Path. and
Bact., 1937, 45, 523.

7645 M.J. Pelczar, Jr., strain Iowa. 1939. J.R. Porter and
W.M. Hale.

7646 and 7647 M.J. Pelczar, Jr., strains 10957 and 12159. 1939.
From Graham. Science, 1938, 88, 171.

7648 M.J. Pelczar, Jr., strain Schultz. 1939. R.A. Webb and
M. Barber. J. Path. and Bact., 1937, 45, 523.

9493 and 9509 O. Felsenfeld, strains CI and M, Chicago Medical
School. 1944. From sheep.

9525 O. Felsenfeld, strain D82. 1944. Type II.

Malleomyces mallei (Zopf) Pribram: See Actinobacillus mallei

Malleomyces pseudomallei (Whitmore) Breed: See Pseudomonas pseudomallei

Microbacterium flavum Orla-Jensen

10340 R.N. Doetsch, strain OJ8, Univ. of Maryland. 1948. From
S. Orla-Jensen.

Microbacterium lacticum Orla-Jensen

8180 and 8181 C.S. Pederson, strains 5 and 6, New York Agric.
Expt. Sta., Geneva. 1941. From S. Orla-Jensen.

Microbacterium thermosphactum McLean and Sulzbacher

11509 W.L. Sulzbacher, strain SW 26, USDA. 1953.

Micrococcus agilis Ali-Cohen

998 R.S. Breed, strain KMA, New York Agric. Expt. Sta. 1927.
Pribram Collection.

9814 F.W. Fabian, Michigan State College. 1945.

Micrococcus candidans Flügge

8406 and 8407 F.E. Colien, strains 87 and 88, Creighton Univ. Sch.
of Med., Omaha, Neb. 1942. Král-Pribram Collection.

8456 NCTC, strain 1657. 1942. Král Collection.

Micrococcus candidus Cohn

5425 A.H. Brown, strain X-25, Univ. of Rochester. 1942. E.O.
Jordan. J. Infect. Dis., 1935, 56, 1.

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- Micrococcus caseolyticus Evans
8460 NCTC, strain 3251. 1942. Received as Tetracoccus liquefaciens. *Sci. Agric.*, 1929, 10, 111.
- Micrococcus cerolyticus Friedmann and Kern
12559 S.J. Ajl, AMC. 1956. Hydrolyzes wax. *Canadian J. Microbiol.*, 1956.
- Micrococcus cinnabareus Flügge
11890 C.B. van Niel, strain L.A.2.1 YA, Hopkins Marine Station. 1954.
- Micrococcus citreus Migula: See Staphylococcus aureus
- Micrococcus conglomeratus Migula
401 G.J. Hucker, strain 62, New York Agric. Expt. Sta. 1925.
- Micrococcus corallinus Cantani
966 M. Levine, strain 28(3), Iowa State College. 1926.
- Micrococcus cryophilus McLean et al.
12226 R.C. Cleverdon, Univ. of Connecticut. 1955.
- Micrococcus epidermidis (Winslow and Winslow) Hucker: See Staphylococcus epidermidis
- Micrococcus flavoroseus Zettnow
397 G.J. Hucker, strain 349, New York Agric. Expt. Sta. 1925.
Král Collection. *Zblt. Bakt.*, I Abt., 1918, 81, 99.
- Micrococcus flavus Trevisan
400 G.J. Hucker, strain 196, New York Agric. Expt. Sta. 1925.
10240 A.R. Stanley, strain 130.21, Commercial Solvents Corp., Terre Haute, Ind. FDA strain 16; PCI strain 1216. Assay of bacitracin.
10240a W.A. Randall, strain PCI 1216/D, FDA. 1954. FDA strain 16RD. Resistant to streptomycin and dihydrostreptomycin.
- Micrococcus freudenreichii Guillebeau
407 G.J. Hucker, strain 71, New York Agric. Expt. Sta. 1925.
8459 NCTC, strain 2699. 1942. Received as Tetracoccus casei. G.J. Hucker.
- Micrococcus hyicus Sompolinsky
11249 D. Sompolinsky, strain 1, Govt. Hosp. Zrifin, Tel Aviv. 1950. Distribution restricted. *Schweizer Archiv für Tierärzte*, 1953, 95, 302.
- Micrococcus luteus (Schroeter) Cohn
398* G.J. Hucker, strain 426, New York Agric. Expt. Sta. 1925.
- Micrococcus lysodeikticus Fleming
4698 A. Fleming, Univ. of London. 1930. Test of lysozyme activity. *Lancet*, 1929, 1, 217.
12698 T.E. King, Oregon State College. 1956.
- Micrococcus metamyceticus Castellani
11824 A. Castellani, Inst. de Med. Trop., Lisbon, 1956.
- Micrococcus myceticus Castellani
11823 A. Castellani, Inst. de Med. Trop., Lisbon. 1954.
- Micrococcus mycetoides Castellani: See Corynebacterium mycetoides
- Micrococcus prevotii Foubert and Douglas: See Peptococcus prevotii
- Micrococcus pyogenes: See Staphylococcus aureus
- Micrococcus roseus Flügge
144 AMC. 1925.

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Micrococcus roseus (Continued)

- 177, 178, 179 and 185 R.S. Breed, New York Agric. Expt. Sta. 1925. Král Collection.
412 and 416 G.J. Hucker, strains 213 and 565, New York Agric. Expt. Sta. 1925.
516 and 534 K.F. Meyer, Univ. of California, Berkeley. 1925.
9815 F.W. Fabian, Michigan State College. 1945.

Micrococcus rubens Migula

- 186 (Micrococcus tetragenus ruber) R.S. Breed, New York Agric. Expt. Sta. 1925. Král Collection. Arb. Bakt. Inst. Tech. Hochsch. Karlsruhe, 1895, 1, 201.

Micrococcus sodonensis Aaronson

- 11880 S. Aaronson, strain B, Haskins Labs., New York City. 1954. Assay of biotin. J. Bact., 1955, 69, 67.

Micrococcus varians Migula

- 399 G.J. Hucker, strain 80, New York Agric. Expt. Sta. 1925.

Micrococcus verna Herrero

- 10209 I. Pirosky, Inst. Bacteriologico "Dr. Carlos G. Malbran," Buenos Aires. 1946. Sensitive to snake venoms.

Micrococcus violagabriellae Castellani

- 12328 A. Castellani, Inst. de Med. Trop., Lisbon. 1955. Annales de l'Institut Pasteur, Oct. 1955.

Micrococcus spp.

- 9273 and 9274 V. Kubes, strains 1 and 2, Inst. of Vet. Res., Caracas, Venezuela. 1944.

- 12084 NCIB, strain 8669. Halophilic. Produces cytochrome b₄. J. Biochem. Tokyo. 1953, 40, 527.

Micromonospora chalcea (Foulerton) Orskov

- 12452 E.M. Weber, strain 1464-217L, Chas. Pfizer and Co., Brooklyn, N.Y. 1956. U.S. Patent 2,809,919.

Micromonospora sp.

- 10026 S.A. Waksman, strain 3450, New Jersey Agric. Expt. Sta., New Brunswick. 1946. Produces micromonosporin.

Mima polymorpha De Bord

- 9957 W.E. Deacon, strain H-B, Dept. of Health, Lincoln, Neb. 1946. From case of gas gangrene. J. Bact., 1945, 49, 511.
10973 CDC. 1951.

Moraxella anatipestifer (Hendrickson and Hilbert) Bruner: See

Pasteurella anatipestifer

Moraxella bovis (Hauduroy et al.) Murray

- 10900 R.D. Barner, strain KSC494, Michigan State Coll. 1951.

Moraxella lacunata (Eyre) Lwoff

- 11748 Margaret Pittman, strain I 51 a, NIH. 1954.

Moraxella spp.

- 12429, 12430 and 12431 D. Locatcher-Khorazo, Columbia-Presbyterian Med. Center, New York, N.Y. 1956. From corneal ulcers.

Mycobacterium avium Chester

- 11755 A.D. MacDonald, strain St. Elizabeth, USDA. 1954.

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Mycobacterium balnei Nordén

11564, 11565, 11566 and 11567 A. Nordén, strains X, XVI, BIV, and V, Medicinka Kliniken, Lund, Sweden. 1953. Strains X and XVI from human elbow lesions, strains BIV, and V from swimming pool.

Mycobacterium bovis Bergey et al. (Mycobacterium tuberculosis var. bovis)

7991 H. J. Corper, Natl. Jewish Hospital, Denver, Colo. 1941.
New York Board of Health.
9805 W. A. Hagan, Cornell Univ. 1945.
9834 B. J. Olson, strain AK, NIH. 1945.
11529 J. E. Williams, strain 854, USDA. 1957. Vaccine strain.
11666 Emily W. Emmart, strain Ravenel D114, NIH. 1953.
11756 W. Steenken, Jr., strain Ravenel, Trudeau Lab., Trudeau, N. Y. 1954.
11757 and 11798 Emily W. Emmart, strains Ravenel T.B. 411 sub-strain and Ravenel D4, NIH. 1954.

12621 G. Seidel, Magistrat von Gros-Berlin, Germany. 1956.

Mycobacterium butyricum Bergey et al.

357 Ruth E. Gordon. 1944. From NCTC via E.G. Hastings, Univ. of Wisconsin, strain 74D. Rep. Local Gov. Bd. (Suppl. of Med. Officer), 1912-13, 42, 299.
11314 F. Stimpert, strain 04909, Parke, Davis and Co., Detroit, Mich. 1952.

Mycobacterium fortuitum Cruz

6841 Ruth E. Gordon, ATCC. 1944. IOC strain 1. Acta Medica de Rio de Janeiro, 1936, 1, 1.
9820 NCTC, strain 1542. 1945. Král Collection. From fish tubercle.
11440 E. Darzins, Minneapolis, Minn. 1953. Received as M. giae. Acta Tuber. Scand., 1952, 26, 170.

Mycobacterium kansasii

12478 and 12479 Ann Pollak, strains G133 Bostrom and G93 Barbee, Univ. of Kansas. 1955.

Mycobacterium laetevirens Lehmann and Neumann: See Mycobacterium smegmatis

Mycobacterium marinum Aronson

927 Ruth E. Gordon, ATCC. 1944. J.D. Aronson, Henry Phipps Inst. From fish. J. Infect. Dis., 1926, 39, 315.

Mycobacterium paraffinicum Davis et al.

12670* John B. Davis, Magnolia Petroleum Co., Dallas, Texas. 1956. From soil. Appl. Microbiol., 1956, 4, 310.

Mycobacterium paratuberculosis Bergey et al.

12227 D.A. Porter, strain 18, USDA. Auburn, Alabama. 1955.

Mycobacterium phlei Lehmann and Neumann

354 Ruth E. Gordon, ATCC. 1944. E.G. Hastings strain 74A; NCTC strain 54.

356 Ruth E. Gordon, ATCC. 1944. E.G. Hastings strain 74C; NCTC strain 524; butter bacillus of Rabinowitsch.

10142 F. Kavanagh, strain 17P, New York Botanical Garden. 1946.

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Mycobacterium piscium Bergey et al.

9819 NCTC, strain 2014. 1945. From cayman.

Mycobacterium ranae (Küster) Bergey et al.

11375 D. Yegian, Ray Brook State Tuberculosis Hospital, Ray Brook, N.Y. 1952. Streptomycin dependent.

Mycobacterium rhodochrous (Overbeck) Gordon and Mihm

271 E.O. Jordan, "B. mycoides roseus II," University of Chicago. 1925. Rush Medical College.

999 R.S. Breed, New York Agric. Expt. Sta., Geneva. 1927. Received as *Bacillus mycoides corallinus*. Pribram Collection; Hefferan.

4273 P.H.H. Gray, strain O-3, Rothamsted Expt. Sta., England, through H.J. Conn, New York Agric. Expt. Sta., Geneva. 1928. Received as *Mycobacterium agreste*. Zblt. Bakt. II Abt., 1928, 73, 74.

4276 H.J. Conn, New York Agric. Expt. Sta., Geneva. 1928. Received as *Mycobacterium crystallophagum*. P.H.H. Gray., op. cit.

4277 H.J. Conn, strain O5. 1928. Received as *Mycobacterium erythropolis*. P.H.H. Gray.

9356 P.H.H. Gray, McGill Univ., Montreal, Canada. 1947. Received as *Proactinomyces globerculum*. Proc. Roy. Soc., 1928, 102, 263.

Mycobacterium smegmatis (Trevisan) Lehmann and Neumann

20 Hygienic Lab., strain 181 (butter bacillus), Washington, D.C. 1925.

68 Hygienic Lab., strain 361 (*Bacillus leprae* Needham). 1925. From human leprosy.

69 AMC, strain H366 (rat No. 1). 1925. Received as *Bacillus leprae*.

101 (*Bacillus smegmatis*) Hygienic Lab., strain 178, Washington, D.C. 1925.

110 Hygienic Lab., strain 393 (frog bacillus of Moeller). 1925.

114 Hygienic Lab., strain 169 (Friedmann's "Bacillus tuberculosis"). 1925.

278 E.O. Jordan, "Bacillus smegmatis," Univ. of Chicago. 1925.

281 E.O. Jordan (mist bacillus of Moeller). 1925.

358 E.G. Hastings, strain 74E, Univ. of Wisconsin. 1925. NCTC strain 335; Marpmann's Bazillus aus Harn.

359 E.G. Hastings, strain 74F. 1925. NCTC strain 334, G.P. 61.

361 E.G. Hastings, "Smegma bacillus." 1925.

362 E.G. Hastings. 1925. Butter Bacillus of Grassberger.

599 E.J. Lynch, Shelton, Conn. 1925. AMNH, strain 69a. Isolated from bovine lung tubercles.

607 John McCormick Inst. 1925. Received as Koch's original culture of *Bacillus tuberculosis*. Now avirulent. Amer. Rev. Tuberculosis, 1948, 58, 697. See Use Section.

615 P. Hauduroy, 1949. Zblt. Bakt. II Abt., 1913, 37, 595.

4676 P. Kyes, Univ. of Chicago. 1930. T.S. Potter. Isolated from tubercles of stork by T. Smith.

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Mycobacterium smegmatis (Continued)

- 8157 H.C. de Souza-Araujo, IOC. 1941. From sputum of leper.
10143 F. Kavanagh, strain 17S, New York Botanical Garden. 1946.
Determination of bacterial spectrum of antibiotics.

Mycobacterium thamnopheos Aronson

- 4445 Ruth E. Gordon, ATCC. 1944. J.D. Aronson, Henry Phipps Inst. From tuberculosis in snakes. J. Infect. Dis., 1929, 44, 215.

Mycobacterium tuberculosis (Zopf) Lehmann and Neumann

(Mycobacterium tuberculosis var. hominis)

- 7690 H.J. Corper, strain 160, Natl. Jewish Hospital, Denver, Colo. 1940.
7989 H.J. Corper, "Gluckson" strain. 1941.
8207 B.J. Olson, NIH. 1941. Trudeau Sanatorium strain R1, Gardner.
8236 B.J. Olson, strain H37, NIH. 1941.
8421 AMC. 1942.
9360 and 9431 Emily W. Emmart, strains H37-RV and H37-RA, NIH. 1947.
9455 Julia M. Coffey, strain 34238, New York State Dept. of Health. 1948. J. Freund strain P₂. Production of old tuberculin.
11752, 11753 and 11754 L.T. Giltner, strains C, Dt and Pn, USDA. 1954. Production of tuberculin.

Mycobacterium tuberculosis var. bovis Lehmann and Neumann: See Mycobacterium bovis

Mycobacterium tuberculosis var. hominis Lehmann and Neumann: See Mycobacterium tuberculosis

Mycobacterium spp. associated with leprosy lesions

- 4233, 4234 and 4235 C.W. Duval, strains 18(112), 110 Barry and 107 Brinkerhoff, Tulane Univ., New Orleans, La. 1928.
4237 and 4240 Ruth E. Gordon, strains 105 Clegg 1 and 111 Elly, ATCC. 1944. C.W. Duval.
4238 and 4239 C.W. Duval, strains 109 Currie and 104 Duval Chrome, Tulane Univ. 1928.
4241 and 4243 C.W. Duval, strains 114 Levy Chrome and 129 Lombardo Pellagrino. 1928.
4244 Ruth E. Gordon, strain 113 Rost and Williams. ATCC. 1944. C.W. Duval.
9031 and 9032 IOC, strains Souza-Araujo Ia and Ib. 1943. From leper and from guinea pig.
9033, 9034 and 9035 IOC, strains Souza-Araujo II, III and V. 1943. From ticks experimentally infected from a leper. Memorias Inst. Oswaldo Cruz, 1942, 37, 413.

Mycobacterium sp. Cold-blooded type

- 9823 NCTC, strain 3185. 1945. From terrapin (*Chelodinia longicollis*).

Mycobacterium sp.

- 9626 L.D. Bushnell, Kansas State College. 1944. J. Bact., 1944, 48, 219.

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- Mycoplana bullata Gray and Thornton
4278 H.J. Conn, New York Agric. Expt. Sta. 1928. P.H.H. Gray
strain 79. Zblt. Bakt. II Abt., 1928, 73, 74.
- Mycoplana dimorpha Gray and Thornton
4279 H.J. Conn, New York Agric. Expt. Sta. 1928. P.H.H. Gray
strain 103. Zblt. Bakt. II Abt., 1928, 73, 74.
- Neisseria catarrhalis (Frosch and Kolle) Holland
8176 C.M. Carpenter, strain 20, Univ. of Rochester, New York,
N.Y. 1941.
- 8193 C.P. Miller, Univ. of Chicago. 1941.
- Neisseria flavescens Branham
13120* Sara E. Branham, strain N155, NIH. 1957. From spinal
fluid in case of meningitis. Pub. Health Repts., 1930, 45, 845.
- Neisseria gonorrhoeae Trevisan
9793 R.W.H. Gillespie, AMC. 1945.
- 9826, 9827, 9828 and 9830 J.E. Faber, strains 1, 2, 3 and 5, AMC.
1945.
- 10150 R.W.H. Gillespie, strain 924, AMC. 1946.
- 10874 A. Abrams, strain 14-A-2, AMC. 1951.
- 11688 and 11689 Julia M. Coffey, strains 40836 (Uri) and 40837
(J.G.), New York State Dept. of Health. 1953. J. Immunol.,
1940, 38, 413.
- Neisseria haemolysans Thjøtta and Böe
10379 NCTC, strain 5414. 1951. T. Thjøtta. Acta Path. et
Microbiol., Scand. Supp., 1938, 37, 527.
- Neisseria intracellularis Holland: See Neisseria meningitidis
- Neisseria meningitidis (Albrecht and Ghon) Holland (Neisseria intracellularis)
- Group A¹
13077* Sara E. Branham, strain M1027, NIH. 1957. Neotype strain
for Group A. Internat. Bull. Bact. Nomen. and Taxon., 1958,
8, 1.
- Group B¹
13090* Sara E. Branham, strain M2092, NIH. 1957. Neotype strain
for Group B. Internat. Bull. Bact. Nomen. and Taxon., 1958,
8, 1.
- Group C¹
13102* Sara E. Branham, strain M1628, NIH. Neotype strain for
Group C. Internat. Bull. Bact. Nomen. and Taxon., 1958,
8, 1.
- Group D¹
13113* Sara E. Branham, strain M158, NIH. Neotype strain for
Group D. Internat. Bull. Bact. Nomen. and Taxon., 1958,
8, 1.
- Neisseria perflava Bergey et al.
10555 Sara E. Branham, strain 7078, NIH. 1949.

¹Other strains from Sara E. Branham available on request.

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- Neisseria sicca (von Lingelsheim) Bergey et al.
9913 A. Abrams, strain 14-D-1, AMC. 1945.
- Neisseria subflava Bergey et al.
11076 J.E. Faber, strain 831F, Univ. of Maryland. 1951.
- Nitrobacter agilis Nelson
12812 R.L. Starkey, Rutgers Univ. 1957.
- Nitrosomonas europaea Winogradsky
12246 R.L. Starkey, Rutgers Univ. 1957. H.L. Jensen, Denmark.
- Nocardia asteroides (Eppinger) Blanchard
3308 S.A. Waksman, Rutgers Univ. 1945.
6846 NCTC, strain 630. 1938. J. McFadyean strain 24 Foal Blackwell. J.T. Edwards. From hock joint of foal.
8674 NCTC, strain 3489. 1942. H.L. Jensen. From soil. Proc. Linn. Soc. N.S. Wales, 1931, 56, 79.
9504 O. F. Isenfield, Chicago Medical School. 1944. From case of Madura foot.
9969 and 9970 C.W. Emmons, strains 9955 and 9956, NIH. 1946. From generalized actinomycosis.
10904 and 10905 C.W. Emmons, strains 9974 and 9976. 1951. Human strains.
- Nocardia cellulans
12830 NCIB, strain 8868. 1957.
- Nocardia convoluta Chalmers and Christpherson
4275 (Mycobacterium convolutum) H.J. Conn, New York Agric. Expt. Sta., Geneva. 1928. P.H.H. Gray. Zblt. Bakt. II Abt., 1928, 73, 74.
- Nocardia gardneri (Waksman) Waksman and Henrici
9604 NCTC, strain 6531. 1945. Production of proactinomycin. Brit. J. Exptl. Path., 1945, 26, 337.
- Nocardia gibsonii (Erikson) Waksman
6842 NCTC, strain 4575. 1938. A.G. Gibson. Spec. Rep. Ser. Med. Res. Coun. London, 1935, No. 203.
- Nocardia vaccinii Demaree and Smith
11092 N.R. Smith, strain BG19, USDA. 1951. From stem galls on Vaccinium.
- Nocardia sp.
12288 D.D. Sutton, Univ. of California, Davis. 1955. Orskov's motile strain.
- Noguchia granulosis (Noguchi) Olitsky et al.
11479 W. Ritter-Deutsch, New York Eye and Ear Infirmary, New York, N.Y. 1953.
- Paracolobactrum aerogenoides Borman et al.
11604 L.K. Borman, strain 3565, Dept. of Health, Hartford, Conn. 1953. Stuart's type 32011. Contains alpha antigen of Stamp and Stone. J. Bact., 1944, 48, 361.
- Paracolobactrum arizonicae (Kaufmann) Borman (Salmonella arizonae)
12323 CDC, strain 3153-55. 1955. Antigenic structure 7:1, 2, 6.
12324 CDC, strain 1089-53. 1955. Antigenic structure 10:1, 2, 5.
12325 CDC. 1955. Antigenic structure 23:33-25.

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- Paracolobactrum coliforme Borman et al.
11605 E.K. Borman, strain 3754, Dept. of Health, Hartford, Conn.
1953. Stuart's Type 31611.
- Paracolobactrum intermedium Borman et al.
11102 M. St. Martin, strain Par 1-a, Ministry of Health, Montreal,
Canada. 1951.
- 11606 E.K. Borman, strain 4920, Dept. of Health, Hartford, Conn.
1953.
- Pasteurella anatipestifer (Hendrickson and Hilbert) Hauduroy et al.
11845 (Moraxella anatipestifer) D.W. Bruner, Cornell Univ. 1954.
Cornell Vet., 1932, 22, 239.
- Pasteurella mastidis (Miessner and Schoop) Hauduroy et al.
10898 and 10899 E.A. Tunnicliff, strains B-31(4540) and H-5106,
Montana State College. 1951. From sheep.
- Pasteurella multocida (Lehmann and Neumann) Rosenbusch and Merchant
6524, 6526 and 6529 H.W. Schoening, strains S-230, D-M-2 and
Duck-S, USDA. 1938.
- 6530 and 6535 I. Danielson, Lederle Labs., Pearl River, N.Y.
1949. USDA strains H-1054 and 60-L, Types II and III.
Amer. J. Vet. Res., 1943, 4, 110.
- 6533 and 6534 H.W. Schoening, strains 590-L and S-1, USDA. 1938.
- 6587 and 6588 Vet. Corps, AMC, strains Scott and BAI. 1938.
- 7228 New York State Dept. of Health, strain 238. 1938. NCTC
strain 1550. From Belgian hare. J. Path. and Bact., 1929,
32, 355 and 1935, 41, 203.
- 7707 I. Danielson, Lederle Labs., Pearl River, N.Y. 1949.
USDA strain 2050 W.J.H., Type I. From turkey. Amer. J.
Vet. Res. 1943, 4, 110.
- 7773 Bureau of Animal Industry, USDA, strain S-4212. 1940.
- 7960 AMC. 1941.
- 7986 H.W. Schoening, strain 11-A, USDA. 1941.
- 7987 H.W. Schoening, USDA. 1941.
- 8369 I. Danielson, strain 310, Type I, Lederle Labs., Pearl
River, N.Y. 1949.
- 8747 J. Hemphill, strain 31, Type I, Lederle Labs., Pearl
River, N.Y. 1951. Amer. J. Vet. Res. 1943, 4, 110.
- 9656, 9657, 9658 and 9659 H.W. Schoening, strains Goat S-1,
Sheep 11A-N, 590-L and Calf B-44, USDA. 1945.
- 10544 C.S. Culbertson, South Bend Med. Foundation, Inc. 1948.
From sputum.
- 11039 H.W. Johnson, strain X73, 7256, USDA. 1951. From
domestic fowl.
- Pasteurella pestis (Lehmann and Neumann) Holland
87 NIH, strain 125 Bombay. 1944.
- 6386 NIH, strain B-126. 1938.
- Pasteurella pneumotropica Jawetz
12555 R.G. Wyllie, strain C57, Univ. of Melbourne, Australia.
1956. Aust. J. Exptl. Biol. and Med. Sci., 1953, 31, 161.
- Pasteurella pseudotuberculosis (Pfeiffer) Topley and Wilson
907, 908, 909, 911, 912 and 913 R.E. Dyer, strains 105, 106, 107,
109, 110 and 111, Hyg. Lab. 1926. Lister Inst.

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Pasteurella pseudotuberculosis (Continued)

- 4284 E.O. Jordan, strain 447, Univ. of Chicago. 1928. Lister Inst. strain Stockholm. Schütze's Group I Type B.
6902, 6903, 6904 and 6905 NCTC, strains 1102, 1105, 2476 and 1779. 1938. Schütze's serological types Group I Type A, Group I Type B, Group II Type A and Group II Type B. Arch. Hyg., Berlin, 1928, 100, 181.

11960 W.J. Mathey, Univ. of California. 1954.

Pasteurella tularensis (McCoy and Chapin) Bergey et al.

- 6223 E. Francis, strain B-38, NIH. 1944.

Pasteurella spp.

- 9973 and 9974 W.R. Hinshaw, strains 55 and 56, Univ. of California, Davis. 1946. Cornell Vet., 1943, 33, 351.

Pediococcus cerevisiae Balcke

- 8081 B.W. Hammer, strain 32, Iowa State College. 1941. Received as Streptococcus citrovorus. J. Biol. Chem., 1948, 176, 165; J. Bact., 1953, 65, 482; J. Biol. Chem., 1949, 177, 533, 545.
10791 C.S. Pederson, strain Fl66, New York State Agric. Expt. Sta., Geneva. 1950. Bact. Revs., 1949, 13, 225.

Peptococcus prevotii (Foubert and Douglas) Douglas

- 9321 (Micrococcus prevotii) Margaret Pittman, strain PC 1, NIH. 1958. From human plasma. J. Bact., 1948, 56, 25.

Photobacterium fischeri Beijerinck

- 7744 (Achromobacter fischeri) F.H. Johnson, Princeton Univ. 1943.

Photobacterium phosphoreum (Cohn) Ford

- 11040 (Bacterium phosphoreum) F.H. Johnson, Princeton Univ. 1951.

Propionibacterium arabinosum Hitchner

- 4965 E.R. Hitchner, Univ. of Maine. 1934. J. Bact., 1934, 28, 473.

Propionibacterium freudenreichii van Niel

- 6207 R.P. Tittsler, strain 53-W of Werkman, USDA. 1943. E.R. Hitchner strain 33. Production of vitamin B₁₂.

Propionibacterium jensenii van Niel

- 4867, 4868 and 4869 C.B. van Niel, strains 24, 29 and 1, Hopkins Marine Station, Pacific Grove, Calif. 1933. Strains 24 and 29, from buttermilk; strain 1, from Gouda cheese.

Propionibacterium pentosaceum van Niel

- 4875 C.B. van Niel, strain 4. 1933. From Emmenthaler cheese.

Propionibacterium peterssonii van Niel

- 4870 C.B. van Niel, strain 20. 1933. From Emmenthaler cheese.

Propionibacterium rubrum van Niel

- 4871 C.B. van Niel, strain 23. 1933. From buttermilk.

Propionibacterium shermanii van Niel

- 8262 R.P. Tittsler, strain 62, USDA. 1941.

- 9614, 9615, 9616 and 9617 R.J. Williams, strains Ell.1, Ell.2, Ell.3 and Ell.4, Univ. of Texas. 1944. C.B. van Niel.

Propionibacterium thoenii van Niel

- 4872 and 4874 C.B. van Niel, strains 19 and 15, Hopkins Marine Station, Pacific Grove, Calif. 1933. From Emmenthaler cheese.

Propionibacterium zeae Hitchner

- 4964 E.R. Hitchner, Univ. of Maine. 1934. J. Bact., 1934, 28, 473.

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Protaminobacter alboflavus den Dooren de Jong

- 8458 NCTC, strain 2875. 1942. L. E. den Dooren de Jong.
Protaminophagous bacterium. Zblt. Abl. Bakt. II Abt., 1927, 71, 193.

Protaminobacter ruber den Dooren de Jong

- 8457 NCTC, strain 2879, 1942. L. E. den Dooren de Jong. Protaminophagous bacterium. Zblt. Abl. Bakt. II Abt., 1927, 71, 193.

Proteus americanus Pacheco

- 4675 G. Pacheco, Inst. Biologico, São Paulo, Brazil. 1930.

Proteus ammoniae Magath

- 4630 Durand Hospital, Chicago. 1929. From brain abscess.
7002 F.S. Orcutt, Virginia Polytech. Inst., Blacksburg. 1938.
From urine.

Proteus inconstans (Ornstein) Shaw and Clarke

- 12013 (Providence Group) CDC, strain 1721. 1955. Carries α antigen.

Proteus mirabilis Hauser

- 9921 C.A. Stuart, Brown Univ. 1945. J. Bact., 1945, 49, 419.
12453 C.A. Stuart, strain D1. 1956. Forssmann antigen.

KK strains

- 7975 R.P. Miller, strain 757 (O form), NIH. 1941.
8259 N.H. Topping, strain Kingsbury B757 (H form), NIH. 1941.
10005 A. Abrams, strain 40-B-1 (H form), AMC. 1946.

Proteus morganii (Winslow et al.) Rauss

- 8019 M.J. Pelczar, strain 21, State Univ. of Iowa. 1941. K.F. Rauss strain 23. J. Bact., 1941, 41, 39.
8076a to 8076d M.J. Pelczar, strains M 1 (NCTC 2815), M 2 (NCTC 2818), M 3 (NCTC 679) and M 4 (NCTC 417). 1941. J. Path. Bact., 1929, 32, 79.
8076e to 8076h M.J. Pelczar, strains M 6 (NCTC 1707), M 7 (NCTC 1709), M 8 (NCTC 2817) and M 11 (NCTC 235). 1941. J. Path. Bact., 1929, 32, 79.
9237 O. Felsenfeld, strain M685, Dept. of Public Welfare, Chicago, Ill. 1943. From food poisoning.
9916 and 9917 C.A. Stuart, H and O forms, Brown Univ. 1945. J. Bact., 1945, 49, 419.

Proteus paraamericanus Magalhães and Aragão

- 6059 M. Magalhães, Raul Leite Labs., Rio de Janeiro. 1937.
Brasil Medico, Nov., 1933, p. 815.

Proteus rettgeri (Hadley et al.) Rustigian and Stuart

- 9250 O. Felsenfeld, Dept. Publ. Welfare, Springfield, Ill. 1943.
From human dysentery case.
9918 and 9919 C.A. Stuart, H and O forms, Brown Univ. 1945.
J. Bact., 1945, 49, 419.

Proteus vulgaris Hauser

- 4669 R. Müller, strain 172569, Hygienischen Inst., Kohn-Lindenthal, Germany. 1930. Zblt. Bakt. Abt. I, 1930, 115, 462.
8427 Georgetown University. 1942. From inner ear infection.
9920 C.A. Stuart, H form, Brown Univ. 1945. J. Bact., 1945, 49, 419.
12454 C.A. Stuart, O form. 1956. Nonmotile.

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Proteus vulgaris (Continued)

X19 strains

- 881 Hyg. Lab. 1926. H form.
6380 M.J. Pelczar, Univ. of Maryland. 1938. O form. Minnesota State Health Labs.
9484 C.P. Hegarty, Georgetown Univ. 1944. O form.

X2 strains

- 6897 NCTC, strain 3307, H form. 1938. From Weil and Felix, 1915. Wiener klin. Wochenschr., 1916, 29, 33.
7829 NIH. 1940. O form.

XL strain

- 6896 NCTC, strain 4636, H form. 1938. From A. Felix, Lister Inst.

Providence Group: See *Proteus inconstans*

Pseudomonas aceris (Ark) Starr and Burkholder

- 10853 B.A. Friedman, USDA, New York, N.Y. 1951. W.H. Burkholder strain PA1.

Pseudomonas aeruginosa (Schroeter) Migula

- 7700 and 7701 W.C. Toebe, strains 140 and 141, American Cyanamid Company, Stamford, Conn. 1946. Highly proteolytic. J. Bact., 1946, 52, 685.

- 8689 and 8707 D.R. Coburn, strains 668 and 604, USDI. 1942.
8709 AMC, strain 25-A-2. 1942.
9027 C.P. Hegarty, Georgetown Univ. 1943.
9721 N.R. Smith, strain 112, USDA. 1945.
10145 F. Kavanagh, New York Botanical Garden. 1946. Antibiotic testing.
10197 L.H. Schwarz and J.A. Lazarus, strain P7, New York City. 1947.

Pseudomonas alcaligenes

- 12815 R. Hugh, strain 187-10, Cancer Clinic, George Washington Univ. 1957. From buccal cavity.

Pseudomonas alliicola (Burkholder) Starr and Burkholder

- 10854 B.A. Friedman, USDA, New York, N.Y. 1951. From onion.

Pseudomonas apii Jagger

- 8722 and 9654 W.H. Burkholder, strains PJ1 and PJ2, Cornell Univ. 1942 and 1944. From celery.

Pseudomonas aptata (Brown and Jamieson) Stevens

- 10205 (*Phytomonas aptata*) P.A. Ark, Univ. of California, Berkeley. 1946. From sugar beet.

Pseudomonas asplenii (Ark and Tompkins) Săvulescu

- 10205 (*Phytomonas asplenii*) P.A. Ark, Univ. of California. 1946. From bird's nest fern. Phytopath., 1946, 36, 758.

- 10855 B.A. Friedman, USDA, New York, N.Y. 1951. W.H. Burkholder strain PA17.

Pseudomonas atrofaciens (McCulloch) Stevens

- 9004 W.H. Burkholder, strain PA13, Cornell Univ. 1942.

Pseudomonas azotocolligans Anderson

- 12417* G.R. Anderson, Univ. of Idaho. 1955. J. Bact., 1955, 70, 129.

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Pseudomonas barkeri (Berridge) Clara

6876 (Bacterium barkeri) NCTC, strain 393. 1938. B.T.P.
Barker. From pear blossom blight. Ann. Appl. Biol., 1918,
5. 62.

Pseudomonas caryophylli (Burkholder) Starr and Burkholder

11441 W.F. Jeffers, Univ. of Maryland. 1953. From carnation wilt.

Pseudomonas cattleyae (Pavarino) Săvulescu

10200 P.A. Ark, Univ. of California, Berkeley. 1946. Received as
Phytomonas cattleyae. NRRL strain B-732. From diseased
leaf of Cattleyae sp. Phytopath., 1946, 36, 695.

Pseudomonas cepacia Burkholder

10856 B.A. Friedman, USDA, New York, N.Y. W.H. Burkholder.

Pseudomonas chlororaphis (Guignard and Sauvageau) Bergey et al.

9446 and 9447 NRRL, strains B-560 and B-561. 1948.

Pseudomonas cichorii (Swingle) Stapp

10857 B.A. Friedman, USDA, New York, N.Y. 1951. W.H. Burk-
holder strain PCl.

Pseudomonas coronafaciens (Elliott) Stevens

9005 W.H. Burkholder, strain PC17, Cornell Univ. 1942.

Pseudomonas delphinii (Smith) Stapp

8719 W.H. Burkholder, strain PD1, Cornell Univ. 1942.

Pseudomonas denitrificans Bergey et al.

12133 WRRL. 1955. L.E. Sacks.

Pseudomonas diminuta Leifson

11568 E. Leifson, Loyola Univ. 1953.

Pseudomonas elongata Humm

10144 H.S. Levinson, Philadelphia Quartermaster Depot. 1946.
H.J. Humm. Liquefies agar.

Pseudomonas excibis Steinhaus

12293* E.A. Steinhaus, strain 20-3-1, Univ. of California, Berkeley.
1955. From gastric caeca of cactus bug.

Pseudomonas flectens Johnson

12775* J.C. Johnson, strain 12339, Dept. Agric. and Stock, Brisbane.
From French beans. Queensland J. Agric. Sci., Sept. 1956.

Pseudomonas fluorescens Migula

948 M. Levine, strain 1013, Iowa State College. 1926. Oxidizes
potassium gluconate to 2-keto gluconate. NRRL, B-10.

949 M. Levine, strain 1062, Iowa State College. 1926. Iowa Eng.
Expt. Sta. Bull. 77, 1926.

10796 S.A. Waksman, strain 68, Rutgers Univ. 1950. Used in test-
ing sensitivity of streptothricin. J. Bact., 1943, 46, 299.

11172 NCIB, strain 8251. 1952. W.C. Evans, Univ. College of
Wales, Bangor. Utilizes p-cresol.

11250 O. Hayashi, strain Tr 23, NIH. 1952. J. Bact., 1951, 62,
691.

11252 and 11253 Elizabeth Verder, NIH. 1952. NRRL, strains B-334
and B-1244.

12121 S.C. Rittenberg, strain P-6, Univ. of S. California. 1955.

12633 A.B. Pardee, strain A.3.12, Univ. of California, Berkeley.
1956. R.Y. Stanier. Degradation of aromatic acids.

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- Pseudomonas fragi (Eichholz) Huss emend. Hussong et al.
4973 B.W. Hammer, Iowa State College. 1935.
- Pseudomonas glycinea Coerper
5717 (*Phytomonas glycinea*) W.H. Burkholder, strain PG2, Cornell Univ. 1942. From soybean.
- Pseudomonas graveolens Levine and Anderson: See Pseudomonas taetrolens
- Pseudomonas haemorrulcogenes Castellani
10752 A. Castellani, strain 2, Inst. de Med. Trop., Lisbon. 1949. From haemolytic ulcer. Bact. Proc. S.A.B., 1950, p. 60.
- Pseudomonas hydrophila (Cnester) Bergey et al.: See Aeromonas hydrophila
- Pseudomonas indoloxidans Gray
9355 P.H.H. Gray, McGill Univ., Montreal. 1947. Proc. Roy. Soc., B, 1928, 102, 263.
- Pseudomonas iodinum (Davis) Tobie
9897 W.C. Tobie, American Cyanamid Co., Stamford, Conn. 1945. H. McIlwain. Production of iodinin. Zblt. Bakt. Abt. II, 1939, 100, 273.
- Pseudomonas lachrymans (Smith and Bryan) Carsner
7386 P.A. Ark, Univ. of California, Berkeley. 1938. From cucumber leaves.
11921 M.A. Smith, USDA. 1954. From squash.
11965 S.P. Doolittle, strain 6, USDA. 1954. From cucumber.
- Pseudomonas lapsa (Ark) Starr and Burkholder
10859 B.A. Friedman, USDA, New York, N.Y. 1951. W.H. Burkholder strain P22.
- Pseudomonas lindneri Kluyver and Hoppenbrouwers. See Zymomonas mobilis
- Pseudomonas maculicola (McCulloch) Stevens
11781 M.A. Smith, USDA. 1954.
- Pseudomonas maculifolium-gardeniae Ark: See Xanthomonas maculifoliogardeniae
- Pseudomonas mangiferaeindicae Patel et al.
11637 M.P. Starr, strain PM, Univ. of California, Davis. 1953. M.K. Patel, strain 18. From *Mangifera indica*. Indian Phytopath., 1948, 1, 147.
- Pseudomonas marginalis (Brown) Stevens
10844 B.A. Friedman, strain CIBP, USDA, New York, N.Y. 1951. From endive.
10858 B.A. Friedman, USDA. 1951.
- Pseudomonas marginata (McCulloch) Stapp
10247 and 10248 (*Phytomonas marginata*) Lucia McCulloch, strains Col. R and Col. 3, USDA. 1947. From gladiolus.
- Pseudomonas mildenbergii Bergey et al.
795 (*Pseudomonas cyanogena*) B.W. Hammer, Iowa State College. 1926. From blue milk. Iowa Agric. Expt. Sta. Res. Bull. 15, 1914.
- Pseudomonas mucidolens Levine and Anderson
4582 and 4586 W.E. Burns, strains 37 and 44, Iowa State College. 1930. J. Bact., 1932, 23, 337.

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Pseudomonas oleovorans Lee and Chandler

8062 A.C. Chandler, Rice Inst. 1941. J. Bact., 1941, 41, 373.

Pseudomonas ovalis Chester

950 M. Levine, strain 2075 (1), Iowa State College. 1926. From creamery waste. Iowa Eng. Expt. Sta. Bull. 77, 1926.

8209 N.R. Smith, strain 77, USDA. 1941. Production of ketogluconic acid.

Pseudomonas oxalaticus Khambata and Bhat

11451 and 11452 NCIB, strains Ox₄ and Ox₆. 1953. J. Bact., 1953, 66, 505.

11883 and 11884 J.V. Bhat, strains Ox₁ and Ox₂₃, Indian Inst. of Sci., Bangalore. 1954.

Pseudomonas papulans Rose

7389 M.P. Starr, Univ. of California, Davis. 1953. Burkholder strain PP4.

Pseudomonas pavonacea Levine and Soppeland

951 M. Levine, strain 33(3), Iowa State College. 1926. From creamery waste. Iowa Eng. Expt. Sta. Bull. 77, 1926.

Pseudomonas perlurida Kellerman et al.

490 (Cellulomonas perlurida) N.R. Smith, strain 131, USDA. 1925. From soil.

Pseudomonas perolens (Turner) Szybalski

10757 (Achromobacter perolens) W. Szybalski, Politechnika Gdanska, Poland. 1950. From musty eggs.

Pseudomonas phaseolicola (Burkholder) Dowson

11355 H.R. Thomas, strain 3035, USDA. 1952. From halo blight of bean plants.

11365 W.H. Burkholder, strain PP7, Cornell Univ. 1952.

Pseudomonas pisi Sackett

11043 W.H. Burkholder, strain PP6, Cornell Univ. 1951. From pea pods.

11055 M.P. Starr, Univ. of California, Davis, 1951. W.H. Burkholder strain PP1. From pea pods.

Pseudomonas primulæ (Ark and Gardner) Starr and Burkholder

10860 B.A. Friedman, USDA, New York, N.Y. 1951. W.H. Burkholder strain PP3.

Pseudomonas pseudomallei (Whitmore) Haynes

11688 (Malleomyces pseudomallei) R.H. Yager, strain China 3, AMC. 1953.

Pseudomonas punctata (Zimmermann) Chester: See Aeromonas punctata

Pseudomonas putida (Trevisan) Migula

4359 A. Stewart, Florida State College for Women. 1928.

Pseudomonas putrefaciens (Derby and Hammer) Long and Hammer

8071, 8072 and 8073 B.W. Hammer, strains 95, 180, and 184, Iowa State College. 1941.

Pseudomonas riboflavina Foster

9526 J.W. Foster, strain 4R3337, Merck and Co., Inc., Rahway, N.J. 1944. Oxidation of riboflavin to lumichrome. J. Bact., 1944, 47, 27.

Pseudomonas rubescens Pivnick

12099 H. Pivnick, Univ. of Nebraska. 1955. From oil emulsion in machine shop. Bact. Proc., 1954, p. 42.

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Pseudomonas rubrilineans (Lee et al.) Dowson: See Xanthomonas rubrilineans

Pseudomonas saccharophila Doudoroff

9114 NRRL, strain B-1492. 1954. M. Doudoroff. *Enzymologia*, 1940, 9, 59; *Arch. Biochem.*, 1947, 14, 29.

Pseudomonas solanacearum (Erw. Smith) Erw. Smith

9910 T.E. Smith, USDA, Oxford, N.C. 1945. From tobacco.

10692 A. Kelman, strain 3-1A, North Carolina State College. 1949. From tomato.

11696 and 11697 A. Kelman, strains 60-1 and 60-4. 1953.

Pseudomonas stizolobii (Wolf) Stapp

12636 and 12637 W.H. Burkholder, strains PS23 and PS25, Cornell Univ. 1956. From white clover leaf and velvet bean.

Pseudomonas striafaciens (Elliott) Starr and Burkholder

10730 W.H. Burkholder, strain PS1, Cornell Univ. 1949.

Pseudomonas stutzeri (Lehmann and Neumann) Kluyver

11607 C.B. van Niel, strain M.D.41.1, Hopkins Marine Station. 1953. *J. Bact.*, 1952, 64, 413.

Pseudomonas suis Woods

11729 Gladys M. Woods. Boynton strain 201-8, Univ. of California, Davis. 1954. From croupous pneumonia of swine.

Pseudomonas syncyanea (Ehrenberg) Migula

9979 W.C. Tobie, American Cyanamid Company, Stamford, Conn. 1946. A.J. Kluyver.

Pseudomonas synxanthina (Ehrenberg) Holland (*Flavobacterium synxanthum*)

796 B.W. Hammer, Iowa State College. 1926. From milk. *Iowa Agric. Expt. Sta. Res. Bull.* No. 20.

9890 R.S. Breed, Cornell Univ. 1945. Cause of yellow color in cream. B.W. Hammer. *Iowa State Coll. Bull.* 15, 1915.

Pseudomonas syringae van Hall

825 C.L. Shear, strain 4127, USDA. 1926. Received as *Bacterium holci*. J.B. Kendrick. From Sudan grass.

7432 P.A. Ark, Univ. of California, Berkeley. 1938. Received as *Phytomonas cerasi* var. *prunicola*. From apricot bud.

12271 and 12326 W.H. Burkholder, strains PS2 and PS11, Cornell Univ. 1955.

12273 and 12274 W.H. Burkholder, strains PS20 and PS21, Cornell Univ. 1955. From lilac and pear blossom.

Pseudomonas tabaci (Wolf and Foster) Stevens

11527 and 11528 W.D. Valleau, strains 16.1 and 18.2, Univ. of Kentucky. 1953.

Pseudomonas taetrolens Haynes

4651 and 4684 (*Pseudomonas graveolens*) W.E. Burns, strains 1 and 53, Iowa State College. 1930. *J. Bact.*, 1932, 23, 343.

Pseudomonas testosteronei Talalay

11996* P. Talalay, Univ. of Chicago. 1955.

Pseudomonas tolaasii Paine

10528 W.J. Dowson, strain 69, Cambridge Univ., England. 1956.

Pseudomonas tomato (Okabe) Alstatt

10862 B.A. Friedman, USDA, New York City. 1951. W.H. Burkholder strain PT7.

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Pseudomonas turbinellae

- 12446 S.R. Venkataraman, strain Ch33FTS, Fisheries Tech. Sta., Kozhikode-1, S. India. 1956.

Pseudomonas tuticorinensis

- 12230 S.R. Venkataraman, strain Sd21FTS, Fisheries Tech. Sta., S. India. 1955.

Pseudomonas viridilivida (Brown) Holland

- 512 (Bacterium viridilividum) L.A. Rogers, USDA. 1925. Nellie A. Brown. From diseased lettuce. J. Agric. Res., 1915, 4, 476.

Pseudomonas vitiswoodrowii Patel and Kulkarni

- 11636 M.P. Starr, strain PV, Univ. of California, Davis. 1953. M.K. Patel, strain 19. From Vitis woodrowii. Current Sci., 1951, 20, 132.

Pseudomonas woodsii (Erw. Smith) Stevens

- 9655 W.H. Burkholder, strain PW3, Cornell Univ. 1944. From carnation.

Pseudomonas xanthe Zetnow

- 8375 G.L. Stahly, strain 3, Ohio State Univ. 1942. C.F. Kelly.

Pseudomonas spp.

- 9229 and 9230 W.A. Randall, strains M-27 and M-69, FDA. 1943. Preparation of pyrogens.

- 10838 S.H. Hutner, Haskins Lab., New York, N.Y. 1951. A. Schatz. Requires quinolinic acid; oxidizes nicotinic acid. Bact. Proc., S.A.B., 1950, p. 140.

- 11150 A. Goldstein, Pharmakol. Inst., Bern. 1952. From fermenting cucumber.

- 11299a O. Hayaishi, strain Tr. No. 6, NIH. 1952. Oxidizes tryptophane via the quinoline pathway.

- 11922 K. Yamasaki, strain 41, Central Res. Inst., Tokyo. 1954. Utilizes nicotine as carbon and nitrogen source. J. Amer. Chem. Soc., 1954, 76, 155.

- 12085 NCIB, strain 8668. 1955. Halophilic. Proc. Japanese Acad., 1954, 30, 113.

- 12443 S.R. Venkataraman, strain ChF, Fisheries Tech. Sta., S. India. 1955. Chitin digesting and denitrifying strain.

Rhizobium japonicum (Kirchner) Buchanan

- 10323 L.W. Erdman, strain 3I1b56, USDA. 1948. For soybean (*Glycine hispida*).

- 10324 L.W. Erdman, strain 3I1b6. 1948. For soybean (*Glycine hispida*). K. Aso, Imperial Univ., Tokyo.

Rhizobium leguminosarum Frank emend. Baldwin and Fred

- 4404 E.B. Fred, strain Pea 302, Univ. of Wisconsin. 1929.

- 7026 W.B. Sarles, strain 326, Univ. of Wisconsin. 1938.

- 10004 L.W. Erdman, strain 3HOql8, USDA. 1946. For peas (*Pisum sativum*) and vetch (*Vicia villosa*).

- 10314 L.W. Erdman, strain 3HOcl. 1948. For peas (*Pisum sativum*) and vetch (*Vicia villosa*).

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- Rhizobium lupini (Schroeter) Eckhardt et al.
10033 L. W. Erdman, strain 3C2k2, USDA. 1946. Univ. of Wisconsin strain 804.
- 10318 L. W. Erdman, strain 3C2d2. 1948. For yellow lupines (*Lupinus luteus*).
- 10319 L. W. Erdman, strain 3C2e1. 1948. For lupine (*Lupinus angustifolius*).
- Rhizobium meliloti Dangeard
4399, 4400 and 4401 E. B. Fred, strains Alfalfa 100, Alfalfa 109 and Alfalfa 129, Univ. of Wisconsin. 1929.
- 7022 W. B. Sarles, strain 158, Univ. of Wisconsin. 1938.
- 9930 N. R. Smith, strain 3DOa2, USDA. 1945. For alfalfa (*Medicago sativa*) and sweet clover (*Melilotus alba*).
- 10310 L. W. Erdman, strain 3DOd4, USDA. 1948. For California bur clovers (*Medicago hispida*).
- 10311 L. W. Erdman, strain 3DOa15. 1948. For alfalfa (*Medicago sativa*) and sweet clover (*Melilotus alba*).
- 10312 L. W. Erdman, strain 3DOa5, USDA. 1948. E. B. Fred strain 101. For alfalfa (*Medicago sativa*) and sweet clover (*Melilotus alba*).
- Rhizobium phaseoli Dangeard
4406 E. B. Fred, strain Bean 403, Univ. of Wisconsin. 1929.
- 7027 W. B. Sarles, Wisconsin strain 414, Univ. of Wisconsin. 1938.
- 10321 and 10322 L. W. Erdman, strains 3I6c2 and 3I6c8, USDA. 1948. For garden beans (*Phaseolus vulgaris*).
- Rhizobium trifolii Dangeard
876 E. B. Fred, strain 54, Univ. of Wisconsin. 1926. A. L. Whiting. For red clover.
- 4402 and 4403 E. B. Fred, strains Clover 203 and Clover 204, Univ. of Wisconsin. 1929.
- 7023 L. W. Erdman, strain 3D1k20, USDA. 1948. Univ. of Wisconsin strain 209. *J. Bact.*, 1942, 43, 336.
- 7025 W. B. Sarles, strain Clover 239, Univ. of Wisconsin. 1938.
- 9928 N. R. Smith, strain 3D1k13, USDA. 1945. For *Trifolium* clovers.
- 10140 W. B. Sarles, strain 205, Univ. of Wisconsin. 1946. *J. Bact.*, 1942, 43, 329.
- 10327 L. W. Erdman, strain 3D1q9, USDA. 1948. L. T. Leonard. For crimson clover (*Trifolium incarnatum*).
- 10328 L. W. Erdman, strain 3D1k5. 1948. For red clover (*Trifolium pratense*) and white clover (*Trifolium repens*).
- Rhizobium spp.
9931 L. W. Erdman, strain 3I6n8, USDA. 1948. L. T. Leonard. For cowpeas (*Vigna sinensis*).
- 10034 L. W. Erdman, strain 3F2b2. 1948. For foxtail dalea (*Dalea alopecuroides*).
- 10244 L. W. Erdman, strain 3I6d3. 1947. For lima beans (*Phaseolus lunatus*).
- 10315 L. W. Erdman, strain 3G5j8, USDA. 1948. L. T. Leonard. For *Sericea lespedeza* (*Lespedeza sericea*).

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Rhizobium spp. (Continued)

- 10316 L. W. Erdman, strain 3Clal. 1948. W.B. Sarles. For guar (*Cyamopsis tetragonoloba*) and *Crotalaria*.
10317 L. W. Erdman, strain 3I2bl. 1948. O.N. Allen, Univ. of Hawaii strain 36-1. For guar (*Cyamopsis tetragonoloba*) and peanuts (*Arachis hypogaea*).
10320 L. W. Erdman, strain 3F4b3. 1948. R.H. Walker. For black locust (*Robinia pseudoacacia*). *J. Amer. Soc. Agron.*, 1936, 28, 28.
10325 L. W. Erdman, strain 3EOc4. 1948. For big trefoil (*Lotus uliginosus*).
10326 L. W. Erdman, strain 3EOa5. 1951. L.T. Leonard. For birdsfoot trefoil (*Lotus corniculatus*).
10703 L. W. Erdman, strain 3G5i7. 1949. For Korean *lespedeza* (*Lespedeza stipulacea*) and *Sericea lespedeza* (*Lespedeza sericea*).
10805 L. W. Erdman, strain 3I5bl. 1950. From *Cajanus indicus*.
10806 L. W. Erdman, strain 3I6o2. 1950. From *Dolichos lablab*.
10807 L. W. Erdman, strain 3I4a4. 1950. From *Pueraria phaseoloides*.
10845 L. W. Erdman, strain 3G2C3(a). 1951. From sanfoin (*Onobrychis sativa*).
11119 L. W. Erdman, strain 3I7al. 1952. From *Alysicarpus vaginalis*.
11444 L. W. Erdman, strain 3HOal. 1953. From *Cicer arietinum*.
11445 L. W. Erdman, strain 3076. 1953. From *Albizia julibrissin*.
11446 L. W. Erdman, strain 1AOcl. 1953. From *Acacia linifolia*.
11447 L. W. Erdman, strain 3I2bl. 1953. From *Erythrina indica*.
11448 L. W. Erdman, strain 3I2cl. 1953. From *Erythrina reticulata*.

Rhodopseudomonas capsulata (Molisch) van Niel

- 11166 NCIB, strain 8286. 1952. C.B. van Niel, strain ATH.231, Hopkins Marine Station.

Rhodopseudomonas gelatinosa (Molisch) van Niel

- 11169 NCIB, strain 8290. 1952. C.B. van Niel, strain ATC.221, Hopkins Marine Station.

Rhodopseudomonas palustris (Molisch) van Niel

- 11168 NCIB, strain 8288. 1952. C.B. van Niel, strain ATH.216, Hopkins Marine Station.

Rhodopseudomonas sphaeroides van Niel

- 11167 NCIB, strain 8287. 1952. C.B. van Niel, strain ATH.241.

Rhodospirillum rubrum (von Esmarch) Molisch

- 277 E.O. Jordan, Univ. of Chicago. 1925.
9791 O.B. Williams, Univ. of Texas. 1952.
11170 NCIB, strain 8255. 1952. S.R. Elsden strain S.1.
C.B. van Niel.

Salmonella abortioequina (Good and Corbett) Bergey et al. 4, 12:-:e, n, x

- 9842 AMC, strain ETS 26. 1945.

Salmonella arizona Kauffmann: See Paracolobactrum arizonae

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- Salmonella asiaticus Castellani and Chalmers
 11810 A. Castellani, Inst. de Med. Trop., Lisbon. 1954.
- Salmonella choleraesuis (Smith) Weldin 6, 7:c:1, 5
 7001 F.S. Orcutt, Virginia Polytech. Inst., Blacksburg. 1938.
- 10708 AMC, strain ETS 34. 1949. Germicide testing.
- Salmonella choleraesuis var. kunzendorf Schutze et al. 6, 7:(c):1, 5
 6958 NCTC, strain 1710. 1938. Brit. Med. Jour., 1923, ii, 105.
- 12011 CDC, strain (5210) (37). 1955.
- Salmonella columbensis (Castellani) Castellani and Chalmers
 10753 A. Castellani, Inst. de Med. Trop., Lisbon. 1949.
- Salmonella enteritidis (Gaertner) Castellani and Chalmers 1, 9, 12:g, m:-
 13076 CDC, strain K-1891. 1958.
- Salmonella gallinarum (Klein) Bergey et al. 1, 9, 12:-:
 9184 W.W. Umbreit, Univ. of Wisconsin. 1943.
- Salmonella paratyphi (Kayser) Castellani and Chalmers 1, 2, 12:a:-
 9150 O. Felsenfeld, Chicago State Hospital. 1943.
- 9281 AMC, strain HA-6-41-N-22. 1944.
- 11737 AMC, strain 41-N-1. 1954. Kessel strain.
- 12652 AMC, strain B6617 (ETS 4). 1956.
- Salmonella paratyphi var. durazzo 2, 12:a:-
 11511 CDC. 1955.
- Salmonella schottmuelleri (Winslow et al.) Bergey et al. 1, 4, 5, 12:b:1, 2
 8759 O. Felsenfeld, Manteno State Hospital, Manteno, Illinois. 1942. From gall bladder.
- 10719 AMC, strain 41-H-6. 1949. TAB vaccine strain.
- 11738 AMC, strain 41-H-1. 1954. Rowland strain.
- Salmonella typhimurium (Loeffler) Castellani and Chalmers 1, 4, 5, 12:i:1, 2
 6994 F.S. Orcutt, Virginia Polytech. Inst., Blacksburg. 1938.
 H. Schütze.
- 7823 D.R. Coburn, strain 1006, USDI, Bowie, Md. 1940.
- Salmonella typhosa (Zopf) White 9, 12, Vi:d:-
 167 AMC, strain 42-A-1a, Rawlings. 1955.
- 6229 AMC, strain 901-H. 1938.
- 6539 FDA, strain Hopkins 26. 1946. Germicide testing.
- 7251 AMC, strain 42-A-58. 1944. Also known as Boxhill strain and Panama 58.
- 9992V AMC, strain Boxhill 58 V. 1949. From strain 42-A-58. Good Vi antigen.
- 9993 AMC, strain 42-A-63. 1949. Army challenging strain.
- 9994 AMC, strain 42-A-1d, "Raw Ben." 1954.
- 10243 W.A. Randall, strain PCI 412, FDA, 1947. Strain ETS 58.
- 10749 AMC, strain 42-A-504 (Felix O-901). 1949.
- 11583 AMC, strain ETS 62 (Vi 1 rough). 1953.
- 11584 AMC, strain ETS 61 (6S rough). 1953.
- 12839 CDC, strain T2 (Almon and Stovall). 1957.
- 12840 CDC, strain 2V (Felix). 1957.
- Salmonella spp.
- Serotype aberdeen 11:i:1, 2
 9434 AMC, strain ETS 90. 1947.
- Serotype adelaide 35:f, g:-
 10718 AMC, strain ETS 170. 1949.

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Salmonella spp. (Continued)

- Serotype anatum 3, 10:e, h:1, 6
9270 O. Felsenfeld, strain 5101, Univ. of Chicago. 1943.
- Serotype bareilly 6, 7:y:1, 5
9115 O. Felsenfeld, Illinois Dept. of Pub. Welfare. 1943.
- Serotype berta 9, 12:f, g, t:—
8392 P.R. Edwards, strain 69, Univ. of Kentucky. 1942.
- Serotype blegdam 9, 12:g, m, q:—
12003 CDC. 1955.
- Serotype bonariensis 6, 8:i:e, n, x
12001 CDC. 1955.
- Serotype bovismorbificans 6, 8:r:1, 5
9692 O. Felsenfeld, strain 8, Univ. of Chicago. 1945.
- Serotype bredeney 1, 4, 12, 27:l, v:1, 7
10728 AMC, strain ETS 124. 1949.
- Serotype budapest 1, 4, 12:g, t:—
11998 CDC. 1955.
- Serotype cerro 18:z₄, z₂₃:—
10723 AMC, strain ETS 100. 1949.
- Serotype champaign 39:k:1, 5
9779 AMC, strain 111.268. 1945.
- Serotype chester 4, 5, 12:e, h:e, n, x
11997 CDC. 1955.
- Serotype chittagong (1), 3, 10, (19):b:z₃₅
12005 CDC. 1955.
- Serotype cubana 1, 13, 23:z₂₉:—
12007 CDC. 1955.
- Serotype daressalaam 1, 9, 12:l, w:e, n
6959 NCTC, strain 2206. 1938. System of Bact., M.R.C., 1929,
4, 86.
- Serotype derby 1, 4, 12:f, g:—
6960 NCTC, strain 1720. 1938. J. Hyg., 1923, 22, 69.
- Serotype dublin 1, 9, 12:g, p:—
979 J.H. Harvey Pirie, S. African Inst. Med. Res., Johannesburg.
1927.
- Serotype eastbourne 1, 9, 12:e, h:1, 5
8398 P.R. Edwards, strain 70, Univ. of Kentucky. 1942.
- Serotype essen 4, 12:g, m:—
6961 NCTC, strain 4781. 1938. F. Kauffmann, strain 173.
- Serotype florida (1), 6, 14, 25:d:1, 7
10727 AMC, strain ETS 162. 1949.
- Serotype gaminara 16:d:1, 7
8324 P.R. Edwards, Univ. of Kentucky. 1941. ISC strain 974(96).
- Serotype give 3, 10:l, v:1, 7
9268 O. Felsenfeld, strain 3019, Univ. of Chicago. 1943.
- Serotype grumpensis 13, 23:d:1, 7
12006 CDC. 1955.
- Serotype hartford 6, 7:y:e, n, x
11915 CDC. 1954.
- Serotype heidelberg 4, 5, 12:r:1, 2
8326 P.R. Edwards, Univ. of Kentucky. 1941. ISC strain 16.

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Salmonella spp. (Continued)

- Serotype illinois (3), (15), 34:z₁₀:1, 5
11646 CDC. 1953
- Serotype inverness 38:k:1, 6
10720 AMC, strain ETS 171. 1949.
- Serotype javiana 1, 9, 12:l, z₂₈:1, 5
10721 AMC, strain ETS 146. 1949
- Serotype kentucky (8)20:i:z₆
9263 O. Felsenfeld, strain 4139, Chicago Medical School. 1943.
- Serotype kirkee 17:b:1, 2
8322 P.R. Edwards, Univ. of Kentucky. 1941. ISC strain 97.
- 9146 O. Felsenfeld, Chicago State Hospital. 1943.
- Serotype kottbus 6, 8:e, h:1, 5
8399 P.R. Edwards, strain 4179, Univ. of Kentucky. 1942. ISC.
- Serotype london 3, 10:l, v:1, 6
8389 P.R. Edwards, strain 1446. 1942. ISC
- Serotype minnesota 21:b:e, n, x
9700 O. Felsenfeld, strain 24, Chicago Med. School. 1945.
Michigan Dept. of Health.
- Serotype montevideo 6, 7:g, m, s:—
8387 P.R. Edwards, strain 623, Univ. of Kentucky. 1942. ISC.
- 9188 O. Felsenfeld, strain 318, Illinois Dept. of Pub. Welfare.
1943.
- Serotype moscow 9, 12:g, q:—
6999 F.S. Orcutt, Virginia Polytech. Inst., Blacksburg. 1938.
- Serotype muenchen 6, 8:d:1, 2
8388 P.R. Edwards, strain 54, Univ. of Kentucky. 1942. ISC.
- 9266 O. Felsenfeld, strain 3001, Chicago Med. School. 1943.
- Serotype muenster 3, 10:e, h:1, 5
8395 P.R. Edwards, strain 4546, Univ. of Kentucky. 1942. ISC.
- Serotype newington 3, 15:e, h:1, 6
8760 O. Felsenfeld, Manteno State Hospital, Illinois. 1942.
- Serotype newport 6, 8:e, h:1, 2
6962 NCTC, strain 129. 1938. From fatal case of food poisoning.
Lancet, 1920, i, 93.
- 10726 AMC, strain ETS 51, phase 2. 1949.
- Serotype onderstepoort (1), 6, 14, 25:e, h:1, 5
9189 O. Felsenfeld, Illinois Dept. of Pub. Welfare. 1943. McD.
Fulton, Texas Salmonella Center.
- Serotype oranienburg 6, 7:m, t:—
9239 O. Felsenfeld, strain E1093. 1943.
- 9265 O. Felsenfeld, strain 2710. 1943.
- Serotype orientalis 16:k:e, n, z₁₅
10724 AMC, strain ETS 211. 1949.
- Serotype panama 1, 9, 12:l, v:1, 5
7378 F. Schift, Hochberg strain 2460, Beth Israel Hosp., New
York, N.Y. 1938.
- 7379 F. Schift, Steinberg strain 9708. 1938.
- Serotype pomona 28:y:1, 7
10729 AMC, strain ETS 169. 1949.

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Salmonella spp. (Continued)

Serotype potsdam 6, 7:l, v:e, n, z₁₅

8397 P.R. Edwards, strain 9781, Univ. of Kentucky. 1942. ISC.

Serotype pretoria 11:k:1, 2

9705 O. Felsenfeld, strain 41, Chicago Medical School. 1945.

P.R. Edwards.

Serotype pullorum 9, 12:--:

9120 O. Felsenfeld, Illinois Dept. of Pub. Welfare. 1943.

9185 O. Felsenfeld, strain E2. 1943.

10398 M.L. Wright, strain OAC-27, Ontario Agric. Coll., Guelph. 1948. J. Amer. Vet. Med. Assn., 1948, 112, 241.

Serotype reading 4, 12:e, h:1, 5

6967 NCTC, strain 1878. 1938.

Serotype riogrande 40:b:1, 5

12008 CDC. 1955.

Serotype rostock 1, 9, 12:g, p, u:--

6997 F.S. Orcutt, Virginia Polytech. Inst., Blacksburg. 1938.
NCTC.

Serotype rubislaw 11:r:e, n, x

10717 AMC, strain ETS 102. 1949.

Serotype saintpaul 1, 4, 5, 12:e, h:1, 2

9712 O. Felsenfeld, strain 127, Chicago Med. School. 1945.
Isolated from cystitis.

Serotype salinatis 4, 12:d, e, h:d, e, n, z₁₅

9191 O. Felsenfeld, Illinois Dept. of Pub. Welfare. McD. Fulton,
Texas Salmonella Center. 1943.

Serotype schleissheim 4, 12, 27:b, z₁₂:--

12000 CDC. 1955.

Serotype selandia 3, 15:e, h:1, 7

8325 P.R. Edwards, Univ. of Kentucky. 1941. ISC strain 7480 (85).

Serotype sendai 1, 9, 12:a:1, 5

8393 P.R. Edwards, strain 571, Univ. of Kentucky. 1942. ISC.

9262 O. Felsenfeld, strain 3275, Chicago Medical School. 1943.
Florida Board of Health.

Serotype senftenberg 1, 3, 19:g, s, t:--

8400 P.R. Edwards, strain 3007, Univ. of Kentucky. 1942. ISC.

9530 J.V. Falisi, Seventh Service Command Med. Lab., Fort
Omaha. 1944.

Serotype simsbury 1, 3, 19:z₂₇:--

12004 CDC. 1955.

Serotype stanley 4, 5, 12:d:1, 2

7308 W.A. Randall, Georgetown Univ. 1938.

Serotype tallahassee 6, 8:z₄, z₃₂:--

12002 CDC. 1955.

Serotype telaviv 28:y:e, n, z₁₅

9190 O. Felsenfeld, Illinois Dept. of Pub. Welfare. 1943. Texas
Salmonella Center.

Serotype tennessee 6, 7:z₂₉:--

10722 AMC, strain ETS 155. 1949.

Serotype texas 4, 5, 12:k:e, n, z₁₅

11999 CDC. 1955.

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Salmonella spp. (Continued)

Serotype thompson 6, 7:k:1, 5

8391 P.R. Edwards, strain 2988, phase 2. 1942. ISC.

10256 AMC, strain ETS 152 (94388), phase 1. 1947.

10257 AMC, strain ETS 40, phase 2. 1947.

Serotype typhisuis 6, 7:c:1, 5

8321 P.R. Edwards, Univ. of Kentucky. 1941. NCTC strain 348.

Serotype uganda 3, 10:k, z₁₃:1, 5

10725 AMC, strain ETS 101. 1949.

Serotype urbana 30:b:e, n, x

9261 O. Felsenfeld, strain 2039, Chicago Med. School. 1943.

Serotype virchow 6, 7:r:1, 2

8390 P.R. Edwards, strain 4519, Univ. of Kentucky. 1942. ISC.

Serotype virginia (8):d:—

9670 F. Spindle, Dept. of Health, Richmond, Va. 1945.

Serotype waycross 41:z₄, z₂₃:—

12009 CDC. 1955.

Serotype w eslaco 42:z₃₆:—

12010 CDC. 1955.

Serotype Wichita 1, 13, 23:d:z₃₇

7563 F. Schiff, Beth Israel Hosp., New York, N.Y. 1939.

Serotype worthington 1, 13, 23:k, w:z

9607 O. Felsenfeld, Chicago Med. School. 1944.

Sarcina aurantiaca Flügge

146 AMC. 1925.

Sarcina erythromyxa (Overbeck) Král

187 R.S. Breed, New York Agric. Expt. Sta. 1943. Král Collection.

Sarcina flava de Bary

147 AMC. 1925

540 K.F. Meyer, Univ. of California, Berkeley. 1925.

Sarcina lutea Schroeter

272 E.O. Jordan, Univ. of Chicago. 1925. Arch. Biochem. and Biophys., 1952, 40, 364.

381 and 382 G.J. Hucker, strains S66 and S82, New York Agric. Expt. Sta. 1925. Susceptible to lysozyme action.

383 G.J. Hucker, strain S85, New York Agric. Expt. Sta. 1925. S. Orla-Jensen. From milk.

533 K.F. Meyer, Univ. of California, Berkeley. 1925.

9341 W.A. Randall, strain PCI 1001, FDA. 1947. J.C. Burke. Assay of aureomycin, chloromycetin and penicillin.

9341a W.A. Randall, strain PCI 1001/D, FDA. 1954. Resistant to dihydrostreptomycin and streptomycin.

9622 R.J. Williams, Univ. of Texas. 1944.

10054 W.A. Randall, strain PCI 1000, FDA. 1946. S.A. Waksman.

10773 B.F. Shema, strain IPC 861, Inst. of Paper Chemistry, Appleton, Wis. 1950. Assay of slime control agents in pulp and paper mill system.

Sarcina subflava Ravenel

7468 W.C. Tobie, strain Mercedita, Mercedita, Puerto Rico. 1939. FDA strain PCI 1009. Assay of bacitracin.

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Sarcina ureae (Beijerinck) Löhnis

6473 N.R. Smith, strain 42, USDA. 1938. M.W. Beijerinck.
Arch. f. Mikrobiol., 1935, 6, 73.

Serratia marcescens Bizio

264 E.O. Jordan, strain 1404, Univ. of Chicago. 1925. From NCTC, through R.S. Breed.
274 R.S. Breed, New York State Agric. Expt. Sta. 1941. NCTC strain 1377.
4002 R.S. Breed, strain K5, New York State Agric. Expt. Sta., 1927. Received as *Serratia indica*. Král Collection; originally from Robert Koch.
4003 R.S. Breed, strain CU37. 1941. Received as *Serratia indica*. J. Bact., 1926, 2, 76.
4180 Hygienisches Institut, strain 233925, Köln-Lindenthal, Germany. 1927. Nonmotile. From milk.
8100 N.R. Smith, strain 116-175, USDA. 1941.
8195 R.S. Breed, strain HY, New York State Agric. Expt. Sta. 1941.
9103 J.D. Aronson, Fort Belvoir, Virginia. 1943. From spinal fluid.

Serratia marcescens var. *kilenensis*

60 AMC. 1925.
275 R.S. Breed, New York Agric. Expt. Sta. 1925. Pasteur Inst., strain 3; L. Fortineau.
990 R.S. Breed, strain BF. 1927.
7316 W.C. Tobie, Mercedita, Puerto Rico. 1938. Type Rb. A. Lasseur.
8101 N.R. Smith, strain 175-205, USDA. 1941.
9986 W.A. Randall, FDA. 1946. S.A. Waksman. Assay of streptomycin.
11111 R.S. Breed, New York Agric. Expt. Sta. 1951. Received as *Serratia urinae*.

Shigella alkalescens: See *Escherichia* spp. ("Alkalescens-Dispar Group")

Shigella boydii Ewing

Serotype 1

8699 AMC. 1942. Boyd Type 170. Bact. Revs., 1942, 6, 16.
9207 AMC, strain 43-G-58. 1943. Boyd strain M44. Trans. Roy. Soc. Trop. Med. Hyg., 1943, 33.

Serotype 2

8700 NCTC. 1943. Boyd Type P288. Bact. Revs., 1942, 6, 16.
9208 AMC, strain 43-G-59. 1943. Boyd strain M272. Trans. Roy. Soc. Trop. Med. Hyg., 1943, 33.

Serotype 3

8702 NCTC. 1943. Boyd Type D1. Bact. Revs., 1942, 6, 16.
9209 AMC, strain 43-G-60. 1943. Boyd strain M277. Trans. Roy. Soc. Trop. Med. Hyg., 1943, 33.

Serotype 4

8701 AMC. 1942. Boyd Type P274. Bact. Revs., 1942, 6, 16.
9210 AMC, strain 43-G-63. 1943. Boyd strain M274. Trans. Roy. Soc. Trop. Med. Hyg., 1943, 33.

BACTERIA

Shigella boydii (Continued)

Serotype 5

- 8704 NCTC. 1944. Boyd Type P143. Bact. Revs., 1942, 6, 16.
9212 AMC, strain 43-G-64. 1943. Boyd strain M280. Trans. Roy. Soc. Trop. Med. Hyg., 1943, 33.

Serotype 6

- 12027 CDC, strain 1713-51. 1951
12477 CDC, strain 9771. 1956. Boyd Type D19, Weil strain XII.

Serotype 7

- 9905 (*Shigella paradyenteriae*, Type Lavington) AMC, strain 4006. 1945.

Serotype 8

- 12028 CDC, strain 1643. 1955. Cox and Wallace's Serotype 112.

Serotype 9

- 12029 CDC, strain 732. 1955.

Serotype 10

- 12030 CDC, strain 6336-52. 1955.

Serotype 11

- 12031 CDC, strain 1624-54. 1955.

Shigella dysenteriae (Shiga) Castellani and Chalmers

- 11835 AMC, strain 43-A-1. 1954. Challenge organism in mouse protection tests.

Serotype 1

- 9361 AMC, strain 43-A-14. 1943.

- 9583 O. Felsenfeld, strain EC154, Chicago Medical School. 1944.
9665 AMC, strain 2519-1944. 1945.

Serotype 2

- 9750 AMC, strain 43-C-6. 1945 TenBroeck strain India.

Serotype 3

- 9751 AMC, strain 43-G-93. 1945. Sachs Type Q771.

Serotype 4

- 9753 AMC, strain 43-G-86. 1945. Sachs Type Q1167; K. M. Wheeler strain 1970.

Serotype 5

- 9764 AMC, strain 43-G-84. 1945. Sachs Type Q1030; K. M. Wheeler strain 1912.

Serotype 6

- 9754 AMC, strain 43-G-81. 1945. Sachs Type Q454; K. M. Wheeler strain 1908.

Serotype 7

- 9752 AMC, strain 43-G-76. 1945. Sachs Type Q902.

Serotype 8

- 12021 CDC, strain 2116-52. 1955.

Shigella flexneri Castellani and Chalmers

Serotype 1a

- 9199 AMC, strain 43-G-68. 1943. Boyd strain M134. Trans. Roy. Soc. Trop. Med. Hyg., 1943, 33.

- 9214 and 9216 O. Felsenfeld, Illinois Dept. of Public Welfare. 1943.

Serotype 1b

- 9380 AMC, strain 43-G-71. 1944.

BACTERIA

Shigella flexneri (Continued)

Serotype 2a

- 9473 AMC, strain 328 Y. 1944. J. Immunol., 1944, 48, 87.
9582 O. Felsenfeld, strain EC153, Chicago Medical School. 1944.
9747 AMC, strain 43-G-94. 1945.

Serotype 2b

- 12022 CDC, strain 3591-52. 1955.

Serotype 3

- 203 E.O. Jordan, Univ. of Chicago. 1925.
9403 AMC, strain 43-G-73. 1944.
11836 AMC, strain 43-G-100. 1954. Challenge organism in mouse protection tests.

Serotype 4

- 9748 AMC, strain 4-2. 1945. Univ. of Cambridge, England.
Proc. Roy. Soc. Trop. Med. Hyg., 1943, 33.

Serotype 4a

- 12023 CDC, strain 5380-52. 1955.

Serotype 4b

- 12024 CDC, strain 1679. 1955.

Serotype 5

- 9204 AMC, strain 43-G-61. 1943. Boyd strain M311. Trans. Roy. Soc. Trop. Med. Hyg., 1943, 33.

Serotype 6

- 12025 CDC, strain 64, 1955.

Serotype X

- 12026 CDC, strain 1677, 1955.

Serotype Y

- 9906 AMC, strain 4665-1945. 1945.

Shigella sonnei (Levine) Weldin

- 9290 AMC, strain 43-GG9. 1944.

- 11060 F. Stimpert, strain 04628, Parke, Davis and Co., Detroit, Mich. 1951. PCI strain 959. J. Bact., 1950, 59, 714.

- 11803 A. Castellani, Institute de Med. Trop., Lisbon. 1954.
Giornale di Batteriologia e Immunologia, 1954, 46, 147.

Shigella spp.

Provisional serotype 58

- 12037 CDC, strain A-58:1646. 1955. Cox and Wallace Type 58.

Provisional serotype 123

- 12033 CDC, strain C-123. 1955.

Provisional serotype 425

- 12032 CDC, strain C-425. 1955.

Provisional serotype 703

- 12034 CDC, strain C-703. 1955.

Provisional serotype 792

- 12036 CDC, strain Ca-792. 1955.

Provisional serotype 2000-53

- 12040 CDC, strain A-2000-53. 1955.

Provisional serotype 2770-51

- 12035 CDC, strain C-2770-51. 1955.

Provisional serotype 3873-50

- 12038 CDC, strain A-3873-50. 1955.

BACTERIA

Sphaerophorus freundii (Hauduroy et al.) Prévot

9817 E. Klieneberger-Nobel, Lister Inst., London. 1955.
Received as *Bacteroides* sp. L. L. Dienes strain 132.

Sphaerophorus necrophorus (Flügge) Prévot

11300 A. Muggia, strain 4 (bovine), Lab. Indust. Farmaceut.
Ecuatorianos, Quito, Ecuador. 1952.
12290 (*Bacteroides funduliformis*) L. S. Suter, strain K3, VA Hosp.,
Memphis. 1955.

Sphaerophorus varius (Eggerth and Gagnon) Prévot

8501 (*Bacteroides varius*) A. H. Eggerth, Long Island Coll. of
Med. 1954.

Sphaerotilus natans Kützing

11021 E. G. Pringsheim, Univ. of Cambridge. 1951.

Spirillum atlanticum Williams

12753* Marion A. Williams, Univ. of S. California. 1957. From
sea water.

Spirillum anulus Williams

11879 Marion A. Williams, S. Illinois Univ. 1954.

Spirillum beijerinckii Williams

12754* Marion A. Williams, Univ. of S. California. 1957. From
sea water.

Spirillum curvatum Williams

11338 S. C. Rittenberg, Univ. of S. California. 1954.

Spirillum giesbergeri Williams

11334 S. C. Rittenberg, Univ. of S. California. 1954.

Spirillum graniferum Williams

9785 O. B. Williams, Univ. of Texas. 1945.

Spirillum itersonii Giesberger

12639 Marion A. Williams, strain Giesberger, S. Illinois Univ.
1956.

Spirillum itersonii var. vulgatum Williams

11331 S. C. Rittenberg, Univ. of S. California 1954.

Spirillum linum Williams

11336 S. C. Rittenberg, Univ. of S. California. 1954.

Spirillum lunatum Williams

11337 S. C. Rittenberg, Univ. of S. California. 1954.

Spirillum polymorphum Williams

11332 S. C. Rittenberg, Univ. of S. California. 1954.

Spirillum serpens (Müller) Winter

11330 A. J. Kluyver, CBS. 1952.

12638 Marion A. Williams, strain Giesberger, S. Illinois Univ.
1956.

Spirillum serpens var. azotum Williams

11335 S. C. Rittenberg, Univ. of S. California. 1954.

Spirillum sinuosum Williams

9786 O. B. Williams, Univ. of Texas. 1945.

Sporocytophaga myxococcoides (Krzemieniewska) Stanier (Cytophaga myxococcoides)

10010 and 10011 N. R. Smith, strains 142 and 143, USDA. 1947.

Staphylococcus aureus Rosenbach

151 AMC. 1925. Albus form.

BACTERIA

Staphylococcus aureus (Continued)

- 152 Hyg. Lab., strain 178. 1925.
- 395 G. J. Hucker, strain 39, New York Agric. Expt. Sta. 1925. Král Collection. Citreus form.
- 4012 R. Müller, Hygienisches Inst., Köln. 1927. Citreus form.
- 4691 G. F. Reddish, Lambert Pharmacal Co., St. Louis. 1930.
- 4776 J. C. Lander, Sherwin-Williams Co., Chicago. 1931. Hyg. Lab.
- 4840 and 4841 R. D. Herrold, John McCormick Inst. 1932. Albus form.
- 6020 C. S. Gibbs, strain Wegetepa, Massachusetts State Coll. 1936. Albus form.
- 6339, 6340 and 6341 W. A. Randall, strains 11, 13 and 14 (human), Georgetown Univ. 1938.
- 6342 and 6343 W. A. Randall, strains 2 and 8 (human), Georgetown Univ. 1938.
- 6516 and 6517 H. W. Schoening, strains 8-A and 13-B (ovine), USDA. 1938.
- 6520 H. W. Schoening, strain 105-A (porcine). USDA. 1938. Albus form.
- 6538 W. A. Randall, strain 209, FDA. 1944. Used in germicide testing.
- 6538DR W. A. Randall, strain PCI 1209/D, FDA. 1954. Resistant to dihydrostreptomycin and streptomycin.
- 6538P W. A. Randall, strain 209P, FDA. 1944. Assay of penicillin. NRRL strain B-313; PCI 1209.
- 6600 AMC, strain 29 (equine). 1938.
- 6601 AMC, strain 23 (equine). 1938. Albus form.
- 8094, 8095 and 8096 G. O. Favorite, strains C.E., C.P. and M.B., Hahnemann Med. Coll., Philadelphia. 1941. J. Bact., 1941, 41, 305.
- 8428, 8429 and 8430 P. A. Little, strains 243 (avian), 245 (ovine), and 263 (equine), Lederle Labs., Inc., Pearl River, N. Y. 1942. Albus forms.
- 8431, 8432 and 8433 P. A. Little, strains 27 (equine), 233 (avian) and 65 (ovine). 1942.
- 9144 J. L. Stokes, strain 3R7089, Merck and Co., Inc., Rahway, N.J. 1943. N.G. Heatley, strain Oxford H; NRRL strain B-314. Assay of penicillin.
- 9314 and 9315 Jensen-Salsbury Labs., Inc., Kansas City, Mo., strains 12-121 (bovine) and 12-123 (rabbit). 1944.
- 9491 A. P. Stewart, Golden State Co., Ltd., San Francisco. 1944. M. Marshall. Albus form. Conversion of dehydroascorbic acid to ascorbic acid.
- 9664 R. W. H. Gillespie, AMC. 1944. From outbreak of food poisoning.
- 9801 E. E. Osgood, strain Oregon-J, Univ. of Oregon. 1945. Assay of penicillin.
- 9996 W. A. Randall, strain SM, FDA. 1946. Cup assay of streptomycin. Proc. Soc. Exptl. Biol. and Med., 1946, 59, 255.

BACTERIA

Staphylococcus aureus (Continued)

- 10055 T.C. Grubb, strain 209-B, Vick's Chemical Co., Flushing, N.Y. 1946. J. Bact., 1946, 51, 205.
- 10390 P.R. Carlquist, AMC. 1948. Coagulase positive.
- 10537 W.A. Randall, strain PCI 1203, FDA. 1948. Assay of bacitracin.
- 10617 NCTC, strain 7856. 1949.
- 10831 E.P. Casman, strain 37, FDA. 1950. Sharp and Dohme.
- 10832 E.P. Casman, strain Wood 46, FDA. 1950. Connaught Labs.
- 11371 W.A. Randall, strain PCI 1251, FDA. 1952.
- 11522 W.L. Williams, Lederle Labs., Pearl River, N.Y. 1953. Variant of FDA strain 209P. Assay of penicillin in feeds.
- 11631 W.A. Randall, strain S4, FDA. 1953. Albus form. Resistant to penicillin.
- 11632 W.A. Randall, strain S13, FDA. 1953. Resistant to penicillin.
- 12207 P. Lucas, strain N-55, Cornell Univ. 1955. Catalase negative.
- 12228 W.A. Randall, strain PCI 1200, FDA. 1955. Albus form. Assay of neomycin. Antibiot. and Chemother., 1957, 7, 640.
- 12598 to 12601 NCTC, strains 8530, 8531, 8532 and 6131. 1956. Serotypes 1 to 4.
- 12602 to 12605 NCTC, strains 6133, 6134, 6135 and 6136. 1956. Serotypes 5 to 8.
- 12606 to 12610 NCTC, strains 6137, 8722, 8723, 8725 and 8726. 1956. Serotypes 9 to 13.
- 12692 FDA, strain PCI 1209/N. 1956. Resistant to novobiocin.
- 12715 Frances Bowman, strain PCI 1209/T, FDA. 1957. Resistant to tetracycline. Antibiot. and Chemother., 1957, 7, 640.

Staphylococcus epidermidis (Winslow and Winslow) Evans

- 155 (*Micrococcus epidermidis*) AMC, strain 263. 1925. Parke, Davis and Co., strain 0258.

Streptobacillus moniliformis Levaditi et al.

- 12422 Julia M. Coffey, strain 40199, New York State Dept. of Health. 1956. Ann. Rept. Div. Labs. and Res., N.Y. State Dept. of Health, 1953, p. 170.

Streptococcus agalactiae Lehmann and Neumann (Lancefield's Group B)

- 4768 T. Smith, strain 55, Rockefeller Inst. Med. Res. 1931. J. Exptl. Med., 1918, 28, 149.
- 6638 Alice C. Evans, strain 916, NIH. 1938. Rebecca C. Lancefield.
- 7077 New York State Dept. of Health, strain 314. 1938.
- 9925 L.A. Burkey, USDA. 1945.

Streptococcus alactosus Smith and Brown (Lancefield's Group A)

- 8058 J.H. Brown, strain S.H., Johns Hopkins Univ. 1941. From case of peritonitis. J. Med. Res., 1915, 31, 455.

Streptococcus asaligenus Frost, Gumm, and Thomas (Lancefield's Group B)

- 8059 J.H. Brown, strain NC 18, Johns Hopkins Univ. 1941. J. Med. Res., 1915, 31, 455.

Streptococcus bovis Orla-Jensen emend. Sherman

- 9809 J.M. Sherman, strain 38, Cornell Univ. 1945.

BACTERIA

- Streptococcus cremoris Orla-Jensen (Group N)
- 9596 C.P. Hegarty, Georgetown Univ. 1944. Cornell Univ.
9625 J.M. Sherman, strain Cl3F, Cornell Univ. 1944.
- Streptococcus damnosus var. minimus Bhandari and Walker
11309 NCIB, strain 8520, 1954.
- Streptococcus diacetilactis Matuszewski et al.
11007 George Josh, Armour and Co., Chicago. 1951. Flavors
butter. Polish Agr. Forest Ann., 1936, 36, 1.
- Streptococcus durans Sherman and Wing (Lancefield's Group D)
6056 J.M. Sherman, strain 23C2, Cornell Univ. 1937. From
human feces.
11576 R.P. Tittsler, strain SD-A, USDA. 1953. From Cheddar
cheese.
- Streptococcus dysgalactiae Diernhofer (Lancefield's Group C)
9926 L.A. Burkey, USDA. 1945.
- Streptococcus equi Sand and Jensen (Lancefield's Group C)
6580 AMC, strain 16, 1938.
9527 T.C. Jones, strain 2-1-22, Veterinary Research Lab.,
Front Royal, Va. 1944.
9528 T.C. Jones, strain 2-1-23. 1944.
- Streptococcus equinus Andrewes and Horder
9812 J.M. Sherman, strain H12B, Cornell Univ. 1945.
- Streptococcus equisimilis Frost and Engelbrecht (Lancefield's Group C)
9542 Alice C. Evans, strain 1180, NIH. 1944.
- Streptococcus faecalis Andrewes and Horder (Lancefield's Group D)
349 E.C. Rosenow, strain 2254, Mayo Clinic. 1925. From case
of poliomyelitis.
828 L. Loewe, strain Bluestein, Mt. Sinai Hospital, New York,
N.Y. 1926. From subacute bacterial endocarditis.
882 B.A. Linden, strain A, USDA. 1926. From food poisoning.
U.S. Pub. Health Repts., 1926, 41, 1647.
4079 Faith P. Hadley, strain 646, Univ. of Mich. 1927. W. L.
Holman, Univ. of Toronto.
4082 Faith P. Hadley, strain 77. 1927. From root canal of
pulpless tooth.
4083 Faith P. Hadley, strain 169, 1927.
4200 K.E. Birkhaug, strain R.F.1, Univ. of Rochester. 1927.
From rheumatic fever. J. Infect. Dis., 1927, 40, 549; Proc.
Soc. Exptl. Biol. and Med., 1927, 24, 541.
6057 J.M. Sherman, strain 24, Cornell Univ. 1937. From cheese.
J. Bact., 1945, 49, 347.
7080 New York State Dept. of Health, strain 110. 1938. From
meat causing food poisoning.
8043 E. Snell, "Streptococcus lactis R," Univ. of Texas. 1941.
Assay of folic acid, pyridoxal and pyridoxamine.
9790 J.L. Stokes, Merck and Co., Inc., 1945. Assay of amino
acids. J. Biol. Chem., 1945, 160, 35.
10541 FDA, strain PCI 1341. 1948. Assay of tyrothrinacin.
10741 R.J. Reedy, strain PCI 1305, FDA. 1949.
11420 E. Snell, strain ST, Univ. of Texas. 1953. NCTC strain
6782. Production of citrulline from arginine.

BACTERIA

Streptococcus faecalis (Continued)

- 11700 Dept. of Bacteriology, Cornell Univ., strain 10C1. 1958.
J. Biol. Chem., 1952, 194, 849.
12755 C.B. van Niel, strain H.3.1, YDC, Hopkins Marine Station.
1957. Motile.

Streptococcus faecalis var. liquefaciens (Sternberg emend. Orla-Jensen) Mattick

- 4532 and 4533 (Streptococcus liquefaciens) M. Frobisher, strains
A1 and A2, Rockefeller Inst. 1929. J. Bact., 1928, 16, 301.

Streptococcus faecalis var. zymogenes (MacCallum and Hastings) Mattick 6055 (Streptococcus zymogenes) J.M. Sherman, strain In 1. Cornell Univ. 1937. From pasteurized milk.

- 10100 See Streptococcus spp.

Streptococcus genitalium Dimock and Edwards

- 6621 and 6622 AMC, strains 513 and Loyal Hannah. 1938.
6623 and 6624 AMC, strains 8F71 and 1F57. 1938.
10009 S.J. Schilling, strain 13-166, Jensen-Salsbury Labs., Inc.,
Kansas City, Mo. 1946.

Streptococcus lactis (Lister) Löhnis (Lancefield's Group N)

- 7962 C.P. Hegarty, strain 125, Georgetown Univ. 1941. J. M.
Sherman's Laboratory, Cornell Univ. J. Bact., 1939, 37, 145.
7963 C.P. Hegarty, strain L21. Proc. Soc. Exptl. Biol. Med.,
1938, 38, 218.
11454 R.P. Tittsler, strain Berridge X 13, USDA. 1953. Used in
Swiss cheese manufacture. Production of nisin.

Streptococcus liquefaciens Sternberg emend. Orla-Jensen: See Streptococcus faecalis var. liquefaciens

Streptococcus mitis Andrewes and Horder

- 903 C.I. Woolsey, Frances Willard Hospital, Chicago. 1926.
From ulcerated sore throat.
6249 W.A. Randall, Georgetown Univ. 1938. From case of
septicemia and endocarditis.
9811 J.M. Sherman, strain M7A, Cornell Univ. 1945.

Streptococcus mucilaginosus Kulka, Cosbie and Walker

- 11304 NCIB, strain 8247. 1952. T.K. Walker, College of Tech-
nology, Manchester, England.

Streptococcus opportunus Brown: See Streptococcus sp., Group B, Type 1b

Streptococcus parvus Bhandari and Walker

- 11308 NCIB, strain 8519. 1952. T.K. Walker, Univ. of Manchester,
England.

Streptococcus pyogenes Rosenbach (Lancefield's Group A)

- 12344 (Type 1) Rebecca C. Lancefield, strain T1^t, Rockefeller Inst.
1957. Griffith strain S.F. 130.
12345 (Type 2) Rebecca C. Lancefield, strain T2^t. 1957. Griffith
strain B.I.T.
12961 (Type 2) Rebecca C. Lancefield, strain C649A^t. 1957. Con-
tains R antigen.
10389 (Type 3) AMC, Colebrook strain Richards. 1948. Rebecca C.
Lancefield. Production of streptolysin O. J. Bact., 1950, 60,
301.

^t One of Rebecca C. Lancefield's typing strains.

BACTERIA

Streptococcus pyogenes (Continued)

- 12346 (Type 3) Rebecca C. Lancefield, strain D58 (Wilson)^t. 1957. Colebrook strain Richards.
- 12384 (Type 3) Rebecca C. Lancefield, strain C203^t. 1957. Dochez strain 1708.
- 10402 (Type 4) Rebecca C. Lancefield, strain T4^t. 1957. Griffith strain Grove Hospital. Produces hyaluronidase. J. Infect. Dis., 1948, 83, 1.
- 12385 (Type 4) Rebecca C. Lancefield, strain J17A4^g. 1957. Coburn strain RPHI.
- 12347 (Type 5) Rebecca C. Lancefield, strain T5B^t. 1957. Griffith strain Franklin.
- 12348 (Type 6) Rebecca C. Lancefield, strain S43^t. 1957. Dochez and Avery strain S43 (Texas).
- 12349 (Type 8) Rebecca C. Lancefield, strain C265^t. 1957. Strain N.F. 14 or S.F.H. Schwentker.
- 12350 (Type 9) Rebecca C. Lancefield, strain T9^t. 1957. Griffith strain Symons.
- 12352 (Type 11) Rebecca C. Lancefield, strain T11^t. 1957. Griffith strain N.E. 73T.
- 11434 and 11435 (Type 12) R. W. Reed, strains H3 and 35, Halifax, Nova Scotia. 1953.
- 11436 (Type 12) R. W. Reed, strain 8. 1953.
- 12351 (Type 12) Rebecca C. Lancefield, strain E14^t. 1957. Dochez strain N. Y. 5.
- 12353 (Type 12) Rebecca C. Lancefield, strain T12^t. 1957. Griffith strain S.F. 42.
- 12354 (Type 13) Rebecca C. Lancefield, strain T13^t. 1957. Griffith strain Glover.
- 12972 (Type 14) Rebecca C. Lancefield, strain T14^t. 1957.
- 9898 (Type 15) Rebecca C. Lancefield, strain T15^t. 1957. Griffith strain J.S. 5.
- 12356 (Type 17) Rebecca C. Lancefield, strain J17E^t. 1957. Coburn strain R9.
- 12357 (Type 18) Rebecca C. Lancefield, strain J17C^t. 1957. Coburn strain R20.
- 12358 (Type 19) Rebecca C. Lancefield, strain J17D^t. 1957. Coburn strain R3.
- 10403 (Type 22) Rebecca C. Lancefield, strain T22^t. 1957. Griffith original strain 63T. Produces hyaluronidase. J. Path. Bact., 1944, 56, 27.
- 8133 (Type 23) Rebecca C. Lancefield, strain T23^t. 1957. Griffith strain Barts 102.
- 10781 (Type 24) Rebecca C. Lancefield, strain C115. 1957. Griffith strain G54.
- 10782 (Type 24) Rebecca C. Lancefield, strain C98^t. 1957.
- 12359 (Type 25) Rebecca C. Lancefield, strain B346op^t. 1957. New York State Dept. of Health strain 41459.

^t One of Rebecca C. Lancefield's typing strains.

^g One of Rebecca C. Lancefield's grouping strains.

BACTERIA

Streptococcus pyogenes (Continued)

- 12360 (Type 26) Rebecca C. Lancefield, strain J17F^t. 1957.
Coburn strain R17.
- 8135 (Type 27) Rebecca C. Lancefield, strain T27^t. 1957.
Griffith strain 780 Tate.
- 12962 (Type 28) Rebecca C. Lancefield, strain T28^t. 1957.
Contains Type 28 M antigen in addition to R antigen.
- 10070 (Type 29) Rebecca C. Lancefield, strain Coggins D23^t. 1955.
- 12362 (Type 30) Rebecca C. Lancefield, strain D24^t. Griffith
strain Quinn. 1957.
- 12363 (Type 31) Rebecca C. Lancefield, strain J137^t. 1957.
- 12364 (Type 32) Rebecca C. Lancefield, strain C121^t. 1957.
Rockefeller Inst. Hospital strain 19RS63.
- 12365 (Type 33) Rebecca C. Lancefield, strain C107^t. 1956.
Rockefeller Inst. Hospital strain 14RS60.
- 12366 (Type 34) Rebecca C. Lancefield, strain C142^t. 1957.
Kuttner strain B22.
- 12367 (Type 35) Rebecca C. Lancefield, strain C171^t. 1957.
Kuttner strain 24 Berg.
- 12368 (Type 36) Rebecca C. Lancefield, strain C119^t. 1957.
Kuttner strain B35.
- 12369 (Type 37) Rebecca C. Lancefield, strain C242^t. 1957.
Kuttner strain 859 DeLellis.
- 12370 (Type 38) Rebecca C. Lancefield, strain C94^t. 1957.
Rockefeller Inst. Hospital strain 13RS1.
- 12371 (Type 39) Rebecca C. Lancefield, strain C95^t. 1957
Rockefeller Inst. Hospital strain 19RS14.
- 12372 (Type 40) Rebecca C. Lancefield, strain C143^t. 1957.
Rockefeller Inst. Hospital strain C143.
- 12373 (Type 41) Rebecca C. Lancefield, strain C101^t. 1957.
Rockefeller Inst. Hospital strain 4RS8.
- 12374 (Type 42) Rebecca C. Lancefield, strain C113^t. 1957.
Rockefeller Inst. Hospital strain IRS79.
- 12375 (Type 43) Rebecca C. Lancefield, strain C126^t. 1957.
Rockefeller Inst. Hospital strain 2RS63.
- 12377 (Type 46) Rebecca F. Lancefield, strain C105^t. 1957.
Rockefeller Inst. Hospital strain 20RS14.
- 12378 (Type 47) Rebecca C. Lancefield, strain C744^t. 1957.
Griffith strain S.F. 13.
- 12963 (Type 48) Rebecca C. Lancefield, strain B403^t. 1957. No R
antigen; suitable for preparing Type 48 antiserum.
- 12964 (Type 48) Rebecca C. Lancefield, strain C510^t. 1957.
Contains R antigen.
- 12379 (Type London) Rebecca C. Lancefield, strain London. 1957.
Todd strain London.
- 12380 (Type H105) Rebecca C. Lancefield, strain H105op^t. 1956.
Tillett strain CO. Fibrinolysin production.
- 12381 (Type B447) Rebecca C. Lancefield, strain B447^t. 1957.
Williams strain Corby B6522.

^t One of Rebecca C. Lancefield's typing strains.

BACTERIA

Streptococcus pyogenes (Continued)

12382 (Type B514) Rebecca C. Lancefield, strain B514^t. 1957.
Nelson strain 7353.

12383 (Type D58X) Rebecca C. Lancefield, strain D58X^t. 1957.
Production of streptolysin O. Variant of strain D58.

Streptococcus pyogenes Rosenbach (Type not specified)

624 W.D. Frost, strain Davis 40, Univ. of Wisconsin. 1925.
4614 E.S. Robinson, strain 4D, Boston Public Health Dept. 1929.
J. Prevent. Med., 1929, 3, 225.
7958 Alice C. Evans, strain 563, NIH. 1941. Birkhaug strain E-1.
8668, 8669, 8670 and 8671 M.G. Sevag, strains C203M, C203G,
C203R and 1685M, Univ. of Pennsylvania. 1942. J. Bact.,
1942, 43, 421.
9342 W.A. Randall, strain PCI 1311, FDA. 1947. Potency testing
of bacitracin.

Streptococcus salivarius Andrewes and Horder

9222 I.C. Gunsalus, strain S20B, Cornell Univ. 1943. J. Biol.
Chem., 1943, 150, 75.
9756, 9758 and 9759 C.F. Niven, Jr., strains S30D, S21B and B₂,
Cornell Univ. 1945. (S30D and B₂ are serological types II
and I respectively.) J. Bact., 1943, 45, 249.

Streptococcus sanguis White

10556, 10557 and 10558 J.M. Sherman, types I, II, I-II, Cornell
Univ. 1949. From subacute bacterial endocarditis. J. Bact.,
1946, 51, 721.

Streptococcus thermophilus Orla-Jensen

7952 L.A. Rogers, strain S, USDA. 1941.

Streptococcus uberis Diernhofer

9927 L.A. Burkey, USDA. 1945.

Streptococcus zymogenes Holland: See Streptococcus faecalis var. zymogenes

Streptococcus spp.

Lancefield's Group B

12400 (Type Ia) Rebecca C. Lancefield, strain O90^t. Rockefeller
Institute. 1957

12401 (Type Ib) (Streptococcus opportunus) Rebecca C. Lancefield,
strain H36B^t. J.H. Brown strain Baby B. 1957. J. Bact.,
1959, 37, 133.

12973 (Type II) Rebecca C. Lancefield, strain V8^t. 1957.

12403 (Type III) Rebecca C. Lancefield, strain D136C(3)^t. Strain 3
Cole 106. 1957.

12386 Rebecca C. Lancefield, strain O90R^g. Todd strain Aronson
Wamoscher. 1957.

12387 Rebecca C. Lancefield, strain V9^g. 1957. O.T. Avery.
Smith's milk strain.

Lancefield's Group C

9892 (Type 7) Rebecca C. Lancefield, strain Azgazardah. 1945.

^t One of Rebecca C. Lancefield's type strains.

^g One of Rebecca C. Lancefield's grouping strains.

BACTERIA

Streptococcus spp. (Continued)

Lancefield's Group C

- 12747 (Type 7) Emily Emmart, strain C7 (Rogers), NIH. 1957.
H. J. Rogers, Natl. Inst. Med. Res., London.
6560 (Type 20) G. J. M. Bullowa, strain Niel, Harlem Hospital,
New York, N. Y. 1938.
8132 (Type 21) Rebecca C. Lancefield, strain F132, Griffith
strain Radford. 1941.
12388 Rebecca C. Lancefield, strain C74^g. 1957. "Human C."
12449 Rebecca C. Lancefield, strain H46A. 1956.
12960 Rebecca C. Lancefield, strain K64^g. 1957. J. Exptl. Med.,
1933, 57, 571.

Lancefield's Group D

- 9854 Rebecca C. Lancefield, strain H69D5. 1945.
12389 Rebecca C. Lancefield, strain C3^g. 1955. O. T. Avery.
12958 Rebecca C. Lancefield, strain D76^g. Sherman strain 26Cl.
1957.
12959 Rebecca C. Lancefield, strain C1^g. 1957. O. T. Avery.
J. Exptl. Med., 1933, 57, 571.

Lancefield's Group E

- 12390 and 12391 Rebecca C. Lancefield, strains K129^g and K131^g.
1956. J. H. Brown, certified milk strains 10 and C3056.

Lancefield's Group F

- 12392 (Type 2) Rebecca C. Lancefield, strain H60R^g. 1957.
9328 (Type 4) Eleanor Bliss, Lancefield strain H59, Johns
Hopkins Univ. 1947.
12393 Rebecca C. Lancefield, strain C628^g. Neter strain 930. 1957.

Lancefield's Group G

- 12395 (Type 1) Rebecca C. Lancefield, strain F68A^g. Bliss strain
Havill III. 1956.
9884 (Type 16) Alice C. Evans, strain 661, NIH. 1942.
12394 Rebecca C. Lancefield, strain D166B^g. 1956. M. Sanders.
Large colony form.

Lancefield's Group H

- 8144 Rebecca C. Lancefield, strain K208^g. 1957. O. T. Avery.
Isolated from diseased tooth.
12396 Rebecca C. Lancefield, strain F90A^g. Hare strain Perryer.
1957.

Lancefield's Group K

- 12399 Rebecca C. Lancefield, strain D34E. Hare strain Sisson.
1955.

Lancefield's Group L

- 9932 and 9933 Rebecca C. Lancefield, strains D167A^g (Fry strain
SHC16) and D167B^g (Fry strain SHC80). 1955.

Lancefield's Group M

- 9934 and 9935 Rebecca C. Lancefield, strains D168A "X" (Fry
strain SHC192) and D168B "X" (Fry strain SHC194). 1945.

Lancefield's Group N

- 9936 Rebecca C. Lancefield, strain C559^g. Shattock strain O. J.
1957.

^g One of Rebecca C. Lancefield's grouping strains.

BACTERIA

Streptococcus spp. (Continued)

Lancefield's Group O

- 11843 Rebecca C. Lancefield, strain B357^g. Boissard and Wormald strain 378. 1957. J. Path. Bact., 1950, 42, 37.
12398 Rebecca C. Lancefield, strain B361^g. Boissard and Wormald strain 415. 1957.

Streptococcus spp.

- 4782 W.J. Stainsby, strain AB13, Bellevue Hospital, New York, N.Y. 1931.
8042 E. Snell, strain P-60, Univ. of Texas, Austin. 1941.
Received as *Leuconostoc mesenteroides*. See Use Section.
9895 Rebecca C. Lancefield, strain 9. 1945. F. L. Horsfall's "Streptococcus MG."
10035 NCTC, strain 7147. 1946. Mattick strain M345/0018.
Biochem. J., 1945, 39, 13.
10100 V.H. Cheldelin, strain P-60, Oregon State College. 1946.
Received as *Leuconostoc* sp. R.J. Williams. J. Bact., 1951, 61, 489.
10761 P. Hauduroy, Centre de Collection de Types Microbiens.
1950. Anaerobic.
11037 and 11038 H. Friedlander, strains F.J.H. and J.S.T., NIH.
1951. Alpha hemolytic. J. Infect. Dis., 1951, 88, 298.
12112 Rebecca C. Lancefield, strain B220 (Elliott strain 5797).
1955. J. Exptl. Med., 1950, 92, 201.
12697 T.E. King, strain P-60(UCLA), Oregon State College. 1956.
Received as *Leuconostoc mesenteroides*. M.S. Dunn.
12747 Emily Emmart, Rogers strain C-7, NIH. 1957. Produces hyaluronidase.
12817, 12818 and 12819 R. Hugh, strains 494-2, 545-3 and 494-3,
Geo. Washington Univ., Washington, D.C. Motile. From buccal cavity.

Streptomyces abikoensis Umezawa et al.

- 12766* Y. Okami, strain Z-1-6, Natl. Inst. Health, Tokyo. 1957.

Streptomyces achromogenes Okami and Umezawa

- 12767* Y. Okami, strain Z-4-1, Natl. Inst. Health, Tokyo. 1957.
Japanese Med. J., 1953, 6.

Streptomyces acidomyceticus Ogata

- 11611 K. Sato, strain 3125, IFO. 1953.

Streptomyces alboflavus (Waksman and Curtis) Waksman and Henrici

- 12626 NRRL, strain B-1273. 1956. Waksman strain 3008.

Streptomyces alboniger Hesselstine et al.

- 12461* Lederle Labs., Pearl River, N.Y., strain P-638. Mycologia, 1954, 46, 16. Distribution restricted.

Streptomyces albus (Rossi-Doria emend. Krainsky) Waksman and Henrici

- 618 A.J. Kluyver, Techn. Univ., Delft. 1926. A. Krainsky.

- 3005 S.A. Waksman, Rutgers Univ. 1944. CBS.

Streptomyces annulatus (Beijerinck emend. Krassilnikov) Waksman

- 3307 S.A. Waksman, Rutgers Univ. 1941.

^g One of Rebecca C. Lancefield's grouping strains.

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- Streptomyces antibioticus (Waksman and Woodruff) Waksman and Henrici
8663 S.A. Waksman, strain 1455, Rutgers Univ. 1942. Produces
actinomycin.
- 10382 NRRL, strain B-546. 1948.
- 11891 E.M. Weber, strain 15784-1, Chas. Pfizer and Co., Inc.,
Brooklyn, N.Y. 1954. U.S. Patent 2,757,123.
- Streptomyces argenteolus
11009 D. Perlman, E.R. Squibb and Sons, strain MD-2428, New
Brunswick, N.J. 1951. J. Bact., 1955, 69, 347. U.S. Patent
2,709,705.
- Streptomyces aureofaciens Duggar
10762 NRRL, strain 2209. 1950. Lederle Lab. strain A-377.
Produces chlortetracycline (Aureomycin). U.S. Patent
2,482,055.
- 10762a to h N. Bohonos, Lederle Labs., Pearl River, N.Y. 1955.
X-ray mutants of strain A-377. Ann. N.Y. Acad. Sci., 1954,
60, 71.
- 12416 Lederle Labs., strain Ha-20. 1955. Produces tetracycline.
Distribution of this strain and its mutagenic derivatives is
restricted.
- Streptomyces aureus (Waksman and Curtiss) Waksman and Henrici
3309 S.A. Waksman, strain 371, Rutgers Univ. 1944.
- Streptomyces bikiniensis Johnstone and Waksman
11062 S.A. Waksman, strain 3514, Rutgers Univ. 1951. J. Bact.,
1948, 55, 323.
- Streptomyces bobitiae (Waksman and Curtiss) Waksman and Henrici
3310 S.A. Waksman, Rutgers Univ. 1944.
- Streptomyces cacaoi (Waksman) Waksman and Henrici
3082 S.A. Waksman. 1947.
- Streptomyces californicus (Waksman and Curtiss) Waksman and Henrici
3312 S.A. Waksman. 1942.
- Streptomyces canus
12237 A.R. Menotti, strain 456786, Bristol Lab., Inc., Syracuse,
N.Y. 1955.
- Streptomyces cellulosae (Krainsky) Waksman and Henrici
3313 S.A. Waksman. 1941.
- Streptomyces chrysomallus Lindenbein
11523 S.A. Waksman, strain 3657, Rutgers Univ. 1953. Produces
actinomycin C.
- Streptomyces cinnamomeus Benedict et al. f. cinnamomeus Pridham et al.
11874* Ruth E. Gordon, strain 3664, Rutgers Univ. 1954. NRRL
strain B-1285. Produces cinnamycin. Phytopath., 1956, 46, 576.
- Streptomyces cinnamomeus f. azacoluta Pridham et al.
12686* NRRL, strain B-1699. 1956. Produces antibiotic(s) against
certain plant-pathogenic fungi. Phytopath., 1956, 46, 576.
- Streptomyces cinnamomensis Okami
12308 K. Sato, strain 3414, IFO. 1955.
- Streptomyces citreus (Krainsky) Waksman and Henrici
10974 S.A. Waksman, strain 3574, Rutgers Univ. 1951. CBS.
- Streptomyces coelicolor (Müller) Waksman and Henrici
3355 S.A. Waksman. 1940

BACTERIA

Streptomyces coelicolor (Continued)

10147 S.A. Waksman, strain 3034, Rutgers Univ. 1946.

Streptomyces diastatochromogenes (Krainsky) Waksman and Henrici
12309 K. Sato, strain 3337, IFO. 1955.

Streptomyces erythraeus (Waksman) Waksman and Henrici
11635 J.M. McGuire, strain M5-12559, Eli Lilly and Co., 1953.
NRRL strain 2338. Produces erythromycin. U.S. Patent
2,653,899.

11912 Ruth E. Gordon, strain 3036, Rutgers Univ. 1954.

Streptomyces exfoliatus (Waksman and Curtis) Waksman and Henrici
12627 NRRL, strain B-1237. 1956. Waksman strain 3316.

Streptomyces flaveolus (Waksman) Waksman and Henrici
3319 S.A. Waksman. 1945. J. Bact., 1948, 56, 457.

Streptomyces flavus (Krainsky) Waksman and Henrici
3369 S.A. Waksman. 1944.

Streptomyces fradiae (Waksman and Curtis) Waksman and Henrici

10745 S.A. Waksman, strain 3535, Rutgers Univ. 1949. Produces
fradicin and neomycin. Distribution restricted.

11903 K. Sato, strain 3123, IFO. 1954.

Streptomyces gedanensis (Löhlein) Müller

4880 Sara A. Scudder, strain 24400, City Hospital, Welfare Island,
New York, N.Y. 1933.

Streptomyces gelaticus (Waksman) Waksman and Henrici

3323 S.A. Waksman, Rutgers Univ. 1950.

Streptomyces gibsonii Waksman and Henrici: See Nocardia gibsonii

Streptomyces gougerotii (Duché) Waksman and Henrici

10975 S.A. Waksman, strain 3590, Rutgers Univ. 1951. CBS.

Streptomyces griseocarneus Benedict et al.

12628* NRRL, strain B-1068. 1956. Produces hydroxystreptomycin.
J. Bact., 1951, 62, 487.

Streptomyces griseolus (Waksman) Waksman and Henrici

3325 S.A. Waksman, Rutgers Univ. 1947.

11796 E.M. Weber, strain 14576-4, Chas. Pfizer and Co., Inc.,
Brooklyn, N.Y. Produces anisomycin.

Streptomyces griseoluteus Umezawa et al.

12768 Y. Okami, strain P.37, Natl. Inst. Health, Tokyo. 1957.
Produces griseolutin. J. Antibiot., Japan, 1952, 5, 477.

Streptomyces griseoroseus

12125 J. Lein, Bristol Lab., Inc., Syracuse, N.Y. 1955. Produces
etamycin.

Streptomyces griseus (Krainsky) Waksman and Henrici

3478 S.A. Waksman, strain 25-G. 1949. Produces grisein.

10137 S.A. Waksman, strain 4, derived from strain 3463, the
original streptomycin-producing strain. 1946. Proc. Soc.
Exptl. Biol. and Med., 1944, 55, 66.

10971 A.B. Kupferberg, Ortho Res. Foundation, Raritan, N.J.
1951. Waksman strain 3533. Produces streptocin.

11429 and 1746 S.A. Waksman, strains 9 (463) and 3570, Rutgers
Univ. 1953.

Streptomyces halstedii (Waksman and Curtis) Waksman and Henrici

10897 S.A. Waksman, strain 3328, Rutgers Univ. 1951.

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Streptomyces hawaiiensis

12236 A.R. Menotti, strain 678506, Bristol Lab., Inc., Syracuse, N.Y. 1950.

Streptomyces hygroscopicus (Jensen) Waksman and Henrici

10976 S.A. Waksman, strain 3951, Rutgers Univ. 1951. CBS.

Streptomyces intermedias (Krüger emend. Wollenweber) Waksman

3329 S.A. Waksman, Rutgers Univ. 1921.

Streptomyces isotonioe (Pearson and Martin) Waksman and Henrici

11747 S.A. Waksman, strain 3476, Rutgers Univ. 1954.

Streptomyces kentuckensis

12691* F.S. Barr, S.E. Massengill Co., Bristol, Tenn. 1956.

Streptomyces lavendulace (Waksman and Curtis) Waksman and Henrici

8664 S.A. Waksman, strain 3440, Rutgers Univ. 1944. Produces streptothricin.

11924 A.C. Finlay, strain 8197-20, Chas. Pfizer and Co., Inc., Brooklyn, N.Y. Produces cycloserine. 1954. U.S. Patent 2,773,878.

Streptomyces nitrosporeus Okami

12769* Y. Okami, strain O-20, Natl. Inst. Health, Tokyo. 1957.

Produces nitrosporin. J. Antibiotics, Japan, 1952, 5, 477.

Streptomyces noursei Brown et al.

11455 Julia M. Coffey, strain 48240, New York State Dept. of Health, Albany. 1953. Produces nystatin. Science, 1953, 117, 609.

11456a Julia M. Coffey, strain 5280, New York State Dept. of Health. 1955. Produces phalamycin. Antibiotics and Chemother., 1953, 3, 818.

Streptomyces odorifer (Rüllmann emend. Lechner-Sandoval) Waksman

6246 S.A. Waksman, Rutgers Univ. 1944.

Streptomyces olivaceus (Waksman) Waksman and Henrici

3335 S.A. Waksman, 1944.

11626 NRRL, strain B-1125. 1953.

12019 E.M. Weber, strain 15920-19, Chas. Pfizer and Co., Inc., Brooklyn, N.Y. 1955. U.S. Patent 2,787,580.

Streptomyces parvus (Krainsky) Waksman and Henrici

12433 S.A. Waksman, strain 3686, Rutgers Univ. 1956.

Streptomyces parvulus

12434 S.A. Waksman, strain 3677, Rutgers Univ. 1956. Produces actinomycin.

Streptomyces praecox (Millard and Burr) Waksman

3374 S.A. Waksman. 1947.

Streptomyces pseudogriseolus

12770 Y. Okami, strain H-16c, Natl. Inst. Health, Tokyo. 1957.

Streptomyces purpureochromogenes (Waksman and Curtis) Waksman and Henrici

3343 S.A. Waksman. 1941.

Streptomyces rimosus Sabin et al.

10970 NRRL, strain B-2234. 1950. Ann. New York Acad. Sci., 1950, 53, 223. Produces oxytetracycline (Terramycin). U.S. Patent 2,516,080.

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Streptomyces rochei Waksman

10739* J.A. Aeschlimann, strain X-15, Hoffman-La Roche, Inc., Nutley, N.J. Arch. Biochem., 1949, 22, 477.

Streptomyces rubrireticuli Waksman and Henrici

12629 NRRL, strain B-1707. 1956. Waksman strain 3631.

Streptomyces rutgersensis (Waksman and Curtis) Waksman and Henrici

3350 S.A. Waksman, Rutgers Univ. 1942.

Streptomyces scabies (Thaxter) Waksman and Henrici

3352 S.A. Waksman. 1931.

10246 C.F. Taylor, strain N54, Univ. of West Virginia. 1947.

R.W. Goss, Univ. of Nebraska. Phytopath., 1947, 37, 49.

Streptomyces thioluteus Okami et al.

12310 K. Sato, strain 3364, IFO. 1955.

Streptomyces venezuelae Ehrlich et al.

10595 D. Gottlieb, strain 8-44, Univ. of Illinois. 1949.

10712* F. Stimpert, strain 04745, Parke, Davis and Co., Detroit, Mich. P.R. Burkholder strain A-65. Produces chloramphenicol (Chloromycetin). J. Bact., 1948, 56, 467.

Streptomyces verne (Waksman and Curtis) Waksman and Henrici

3353 S.A. Waksman, Rutgers Univ. 1947.

Streptomyces vinaceus Mayer et al.

11861 NRRL, strain B-2285. 1954. Produces vinactin. U.S. Patent 2,633,445.

Streptomyces virginiae Grundy et al.

12630* NRRL, strain B-1447. 1956. Produces mycobacidin. Antibiot. and Chemother., 1952, 2, 233.

Streptomyces viridifaciens

11989 B. Heinemann, strain 567201, Bristol Lab., Syracuse, N.Y. 1954. U.S. Patent 2,712,517.

Streptomyces viridis Millard and Burr

3372 S.A. Waksman, Rutgers Univ. 1947.

Streptomyces viridochromogenes (Krainsky) Waksman and Henrici

3356 S.A. Waksman, Rutgers Univ. 1942.

Streptomyces viridoflavus Waksman and Taber

12631 NRRL, strain B-1548. 1956. Waksman strain 3685.

Streptomyces willmorei (Erikson) Waksman and Henrici

3332 S.A. Waksman. 1940. Received as S. microflavus.

6867 NCTC, strain 1856. 1938.

Streptomyces spp.

11071 and 11071a J.F. Pagano, strains 189-1 and M 1000, E.R. Squibb and Sons. 1951. Produce vitamin B₁₂.

11238 Philadelphia Quartermaster Depot, strain B-814. 1952.

From tarpaulin, New Guinea. Actively cellulolytic; used for production of cell-free filtrates that hydrolyze cellulose and derivatives.

11862 NRRL, strain 2288. 1954. Produces Antimycin A. U.S. Patent 2,677,170.

Streptosporangium roseum Couch

12428* J.N. Couch, strain 27b, Univ. of North Carolina. 1956.

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Thiobacillus novellus Starkey

8093 R. L. Starkey, New Jersey Agric. Expt. Sta. 1941.

Thiobacillus thiooxidans Waksman and Joffe

8085 R. L. Starkey, 1941.

Thiobacillus thioparus Beijerinck

8158 R. L. Starkey. 1954.

Veillonella alcalescens Prévot

12641 and 12642 (Veillonella gazogenes) M. J. Pelczar, strains BYR2 and CLE1, Univ. of Maryland. 1956.

Veillonella parvula (Veillon and Zuber) Prévot

10790 J. E. Faber, Prevot's strain TE3, Univ. of Maryland, 1950. J. Bact., 1950, 59, 349.

Vibrio comma (Schroeter) Winslow et al.

23 Hyg. Lab. 1925. AMNH, strain 68.

11623 AMC, strain 4Z. 1953. Australian J. Exptl. Biol. and Med. Sci., 1947, 25, 227; J. Immunol., 1953, 71, 110.

Type Hikoshima

11558 O. Felsenfeld, strain 3, Med. Corps, AUS. 1953.

Type Inaba

9459 P. R. Carlquist, strain 20-A-10, AMC. 1950. Calcutta School of Trop. Med. Production of vaccine.

11556 and 11628 O. Felsenfeld, strains 75 and 117. 1953.

Additional strains from O. Felsenfeld also available.

Type Ogawa

9458 P. R. Carlquist, strain 20-A-41, AMC. 1950. Pasteur Inst. Production of vaccine.

11557 and 11629 O. Felsenfeld, strains 277 and 107. 1953.

Additional strains from O. Felsenfeld also available.

Vibrio spp., Cholera Group

Dieu

11555 O. Felsenfeld, Med. Corps, AUS. 1953.

El Tor

11553 O. Felsenfeld, strain 5. 1953.

Paracholera

11630, 12215, 12216 and 12217 O. Felsenfeld, strains W642, W554, F562 and W557. 1953 and 1954.

Yanagihara

11554 O. Felsenfeld. 1953.

Vibrio cuneatus Gray and Thornton

6972 NCTC, strain 2583. 1938. P. H. H. Gray. From soil. Zblt. Bakt. II Abt., 1928, 73, 74.

Vibrio fetus Smith and Taylor

11310 C. D. Kuzdas, strain 543, Univ. of Wisconsin. 1957. A. B. Crawford.

11311 C. D. Kuzdas, strain RL51, Univ. of Wisconsin. L. F. Williams.

Vibrio jejuni Jones et al.

11734 J. F. Ryff, strain 22721, Wyoming Vet. Lab. 1955.

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Vibrio metschnikovii Gamaléia

7708 University of Maryland. 1940.

Vibrio percolans Mudd and Warren

8461 NCTC, strain 1937. 1942. S. Mudd. J. Bact., 1923, 8, 447;
J. Bact., 1953, 65, 263; Canadian J. Microbiol. 2, 102.

Vibrio rubicundus Gottron et al.

8361 R. H. Weaver, Univ. of Kentucky. 1942. J. Bact., 1942, 43,
61.

Vibrio tyrogenus (Flügge) Holland

7085 New York State Dept. of Health. 1938. AMNH, strain 225A.

Vibrio sp.

11171 ("Vibrio O1") NCIB, strain 8250. 1952. W.C. Evans. Break-
down of aromatic ring compounds. Nature, Nov. 3, 1951.

Waybridgia sp.

11027 E.G. Pringsheim, Univ. of Cambridge, England. 1951.
From cow dung.

Xanthomonas albilineans (Ashby) Dowson

12785 A. Hayward, Colonial Microbiological Research Inst.,
Trinidad. 1957.

Xanthomonas alfalfae (Riker et al.) Dowson

11765 D.D. Sutton, strain XA121, Univ. of California. 1954. M.K.
Patel.

Xanthomonas amaranthicola Patel

11645 M.P. Starr, strain XA, Univ. of California. 1953. M.K.
Patel strain 16. Host: Amaranthus viridis. Curr. Sci.,
1952, 21, 346.

Xanthomonas badrii Patel et al.

1172 D.D. Sutton, strain XB103, Univ. of California. 1953. M.K.
Patel strain 4. Host: Xanthium strumarium. Indian Phyto-
path., 3, 103.

Xanthomonas begoniae (Takimoto) Dowson

6718 and 11725 W.H. Burkholder, strains XB3 and XB9, Cornell
Univ. 1954.

11726 W.H. Burkholder, strain XB10, Cornell Univ. 1954. E.
Hellmers, Denmark.

Xanthomonas beticola (Smith et al.) Săvulescu

10309 J.E. Kotila, USDA. 1948.

Xanthomonas beticola Patel et al.

11677 D.D. Sutton, strain XB104, Univ. of California. M.K. Patel
strain 11. 1953. Host: Piper betle. Curr. Sci., 1951, 20, 106.

Xanthomonas cajani Kulkarni et al.

11639 M.P. Starr, strain XC, Univ. of California. 1953. M.K.
Patel strain 5. Host: Cajanus cajan. Curr. Sci., 1950, 19,
384.

Xanthomonas campestris (Pammel) Dowson

6402 J.G. Narrar, Virginia Polytech. Inst., Blacksburg. 1938.

7381 P.A. Ark, Univ. of California. 1938. From broccoli.

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- Xanthomonas carotae (Kendrick) Dowson
10547 W.H. Burkholder, strain XC11, Cornell Univ. 1949.
- Xanthomonas cassiae Kulkarni et al.
11638 M.P. Starr, strain XC, Univ. of California. 1953. M.K.
Patel strain 6. Host: Cassia tora. Curr. Sci., 1951, 20, 47.
- Xanthomonas celebensis (Gäumann) Dowson
10710 and 10711 (*Pseudomonas celebensis*) CBS. 1949.
- Xanthomonas clerodendri Patel et al.
11676 D.D. Sutton, strain XC121, Univ. of California. 1953. M.K.
Patel strain 10. Host: Clerodendron spp. Curr. Sci., 1952, 21, 74.
- Xanthomonas corylina (Miller et al.) Starr and Burkholder
11227 and 11328 P.W. Miller, USDA. 1952.
- Xanthomonas desmodii Uppal and Patel
11640 M.P. Starr, strain XD, Univ. of California. 1953. M.K.
Patel strain 1. Host: Desmodium diffusum. Indian Phytopath., 1949, 2, 168.
- Xanthomonas desmodiagangeticii Uppal et al.
11671 D.D. Sutton, strain XD106, Univ. of California. 1953. M.K.
Patel strain 3.
- Xanthomonas erythrinae Patel
11679 D.D. Sutton, strain XE101, Univ. of California. M.K. Patel
strain 17. Host: Erythrina indica.
- Xanthomonas geranii (Burkholder) Dowson: See Xanthomonas pelargonii
- Xanthomonas hederae (Arnaud) Dowson
9653 W.H. Burkholder, strain XH6, Cornell Univ. 1944.
- Xanthomonas hyacinthi (Wakker) Dowson
12612 W.H. Burkholder, strain XH8, Cornell Univ. 1956.
- Xanthomonas juglandis (Pierce) Dowson
11329 P.W. Miller, USDA. 1952.
- Xanthomonas lawsoniae Patel
11674 D.D. Sutton, strain XL103, Univ. of California. 1953. M.K.
Patel strain 8. Host: Lawsonia alba.
- Xanthomonas maculifoliigardeniae (Ark) Elrod and Braun
10201 (*Phytomonas maculifolium-gardeniae*) P.A. Ark, California
strain, Univ. of Calif., Berkeley. 1946. Phytopath., 1946, 36, 865.
- Xanthomonas malvacearum (Erw. Smith) Dowson
9924 W.H. Burkholder, strain XM13, Cornell Univ. 1945. R.
Weindling.
12131 and 12132 L.S. Bird, isolates 52-3 (Race 1) and G4 (Race 2),
Texas A and M Coll. 1955.
- Xanthomonas melhusi Patel
11644 M.P. Starr, strain XM, Univ. of California. 1953. M.K.
Patel strain 14. Host: Tectona grandis. Curr. Sci., 1952, 21, 345.
- Xanthomonas papavericola (Bryan and McWhorter) Dowson
10204 P.A. Ark, Univ. of California. 1946.
- Xanthomonas pelargonii (Brown) Starr and Burkholder
8721 W.H. Burkholder, strain XP15, Cornell Univ. 1942.
11057 and 11058 (*X. geranii*) M.P. Starr, strains XG4 and XG5. 1951.

BACTERIA

Xanthomonas phaseoli (Erw. Smith) Dowson

- 9563 W.H. Burkholder, strain XP20, Cornell Univ. 1944.
10198 P.A. Ark, Univ. of California. 1946. From red kidney bean.
10199 P.A. Ark. 1946. From black bean. J. Bact., 1946, 51, 699.

Xanthomonas phaseoli var. sojensis (Hedges) Starr and Burkholder

- 11766 D.D. Sutton, strain XP144, Univ. of California. 1954. M.K.
Patel. From soybean.

Xanthomonas poinsettiae Patel

- 11643 M.P. Starr, strain XP, Univ. of California. 1953. M.K.
Patel strain 12. Host: Euphorbia pulcherrima. Indian
Phytopath., 1951, 4, 144.

Xanthomonas pruni (Erw. Smith) Dowson

- 10016 and 10017 W.H. Burkholder, strains XP11 and XP27, Cornell
Univ. 1946.

Xanthomonas ricinicola (Elliott) Dowson

- 11767 D.D. Sutton, strain XR101, Univ. of California. 1954. M.K.
Patel. From Ricinus communis.

Xanthomonas rubrilineans (Lee et al.) Starr and Burkholder

- 12529 and 12530 (Pseudomonas rubrilineans) W.J. Dowson, strains
359 and 360, Cambridge Univ., England. 1956.

Xanthomonas sesbaniae Patel et al.

- 11675 D.D. Sutton, strain XS102, Univ. of California. 1953. M.K.
Patel strain 9. Host: Sesbania aegyptiaca.

Xanthomonas stewartii (Erw. Smith) Dowson

- 8199 and 8200 (Bacterium stewartii) W.H. Burkholder, strains
3152 (A14) and 3153 (D51), Cornell Univ. 1941. E.W. Lind-
strom, Ames, Iowa.

Xanthomonas tamarindi Patel

- 11673 D.D. Sutton, strain XT105, Univ. of California. 1953. M.K.
Patel strain 7. Host: Tamarindus indica.

Xanthomonas translucens (Jones et al.) Dowson

- 9000 W.H. Burkholder, strain XT6, Cornell Univ. 1942.
9002 W.H. Burkholder, strain XT8, Cornell Univ. 1949.
10731 W.H. Burkholder, strain XT1, Cornell Univ. 1949. From
barley.
10768 A.J. Riker, strain PH-1-6, Univ. of Wisconsin. 1950.
From timothy.
10769 A.J. Riker, strain AG-27-2, Univ. of Wisconsin. 1950.
From quack grass.
10770 A.J. Riker, strain H-20-3, Univ. of Wisconsin. 1950.
From barley.
10771 A.J. Riker, strain 3045-2, Univ. of Wisconsin. 1950.
10772 A.J. Riker, strain 10-6-3, Univ. of Wisconsin. 1950.
From rye.

Xanthomonas trichodesmae Patel

- 11676 D.D. Sutton, strain XT106, Univ. of California. 1953. M.K.
Patel strain 15. Host: Trichodesma zeylandicum.

Xanthomonas uppali Patel

- 11641 M.P. Starr, strain XU, Univ. of California. 1953. M.K.
Patel strain 2. Host: Ipomoea muricata. Indian Phytopath.,
1948, 1, 67.

BACTERIA

Xanthomonas vesicatoria (Dodge) Dowson

11551 M.P. Starr, strain XV23, Univ. of California. 1953. From tomato.

11633 W.H. Burkholder, strain XV25, Cornell Univ. 1953. From pepper.

Xanthomonas vignicola Burkholder

11648 and 11649 W.H. Burkholder, strains XV18 and XV19, Cornell Univ. 1953. From cowpeas. Phytopath., 1944, 34, 431.

Xanthomonas vitians (Brown) Dowson

11525 W.H. Burkholder, strain XL3, Cornell Univ. 1953. Phytopath., 1954, 44, 592.

Zymomonas mobilis (Lindner) Kluyver and van Niel

10988 (Pseudomonas lindneri) NRRL, strain B-806. 1952.

BACTERIOPHAGES

The American Type Culture Collection has the following bacteriophages available (the phage is identified by the host species name and ATCC strain number followed by the letter B where there is a single phage for a given host, or by the letter B followed by subscripts B₁, B₂, etc.) where there is more than one phage specific for a given host strain; phage strain number is followed by the donor's name, his designation for the phage strain, his address, the date of deposit in the ATCC, references to the literature, and the donor's designation for the host):

Azobacter vinelandii Lipman

12518-B O. Wyss, Univ. Texas. 1956. Jour. Bact., 1955, 70, 486.
Host strain 0.

Bacillus anthracis Cohn

11949-B Elinor McCloy, strain W alpha, London School of Hygiene and Tropical Medicine. 1954. Jour. Hygiene, 1951, 49, 114.
Host strain Davis.

Bacillus brevis Migula

10027-B N.R. Smith, USDA. 1946. Host strain 605.

Bacillus cereus Frankland and Frankland

7064-B N.R. Smith, USDA. 1938. Host strain 201.

Bacillus cereus var. mycoides (Flügge) Smith et al.

11986-B A.P. Krueger, Univ. Calif. 1954. Jour. Gen. Phys. 1952, 35, 6. Host strain N.

12826-B D.M. Bertucci, "Phagus pertinax", Univ. Oregon, Eugene. 1957. Host strain A, Variant IV. (ATCC No. 12827, "B. mycoides" strain A, parent adherent series also susceptible.)

Bacillus megaterium de Bary

11478-B P.B. Cowles, strain M1, Yale University, New Haven, Conn. 1953. Host strain S (A.D. Hershey's strain PR3E).

Bacillus polymyxa (Prazmowski) Migula

12060-B₁, -B₂, -B₃, -B₄ A.E. Francis, strains A, B, C, and D, Wellcome Research Laboratory, Beckenham, England. 1955. Jour. Gen. Microbiology, 1949, 3, 425. Host strains CN 1417, CN2002, CN2366, CN2161, and CN2222.

Bacillus subtilis Cohn emend. Prazmowski

12139-B N.Y. Botanical Garden (I.N. Asheshov collection). 1955. Originally from Commercial Solvents Corp. Host strain CSC.

12140-B N.Y. Botanical Garden (I.N. Asheshov collection). 1955. Originally from D'Herelle Lab., Paris. Host strain NB.

Bacillus sp. (thermophilic)

12016-B C. Georgi, Univ. Nebraska. 1955. Proc. Soc. Exp. Biol. and Med., 1955, 88, 373. Host strain National Canners Ass'n. 2184.

Corynebacterium diphtheriae (Flügge) Lehmann and Neumann

11951-B N.B. Groman, strain B, Univ. Washington, Seattle. 1954. Jour. Bact., 1953, 66, 178. Host strain C4B.

BACTERIOPHAGES

Corynebacterium pseudotuberculosis (Buchanan) Eberson

12519-B D.H. Howard, Univ. Calif. Medical Center, Los Angeles. 1955. Host strain Ov5.

Corynebacterium sp.

12052-B D.H. Howard, strain DLC 2921/49. 1955. J. Bact., 1954, 68, 316. Host strain DLC 842/50.

Escherichia coli (Migula) Castellani and Chalmers

8677-B W.J. Elford, strain C36, Nat'l. Inst. for Med. Res., London. Jour. Path. Bact., 1933, 36, 307. Host strain C36.

11303-B₁, -B₂, -B₃, -B₄, -B₅, B₆, and -B₇ S.E. Luria, strains T₁ through T₇, Univ. Illinois. 1952. Host strain B.

12141-B N.Y. Botanical Garden (I.N. Asheshov collection), strain 5. 1955. Originally from J.W. MacNeal collection. Host strain C.

12142-B₁, -B₂, -B₃, -B₄, and -B₅ Same source as above, strains 49B, 24B, 50Br, 53 alpha, and FCZ. 1955. Originally from D'Herelle Labs., Paris. Host strain FCb.

12143-B Same source as above, strain L2. 1955. Originally from A. Schatz. Host strain L2.

12144-B₁, -B₂, -B₃, and -B₄ N.Y. Botanical Garden (I.N. Asheshov collection), strains 6B, 8, 6A, and 6C. 1955. Host strain Yoeman.

12404-B₁, -B₂ Same source as above, strains 2 and 4. 1955. Host strain alpha.

Mycobacterium phlei Lehmann and Neumann

11725-B J.M. Desranleau, Ministry of Health, Montreal, Canada. 1954.

11758-B G. Penso (through Domenico Marotta), Phagus phlei, Istituto Superiore di Sanita, Rome, Italy. 1954. Host strain Timoteo.

Mycobacterium smegmatis (Trevisan) Lehmann and Neumann

11727-B J.M. Desranleau, Ministry of Health, Montreal, Canada. 1954.

11762-B G. Penso (through Domenico Marotta), Phagus smegmatis, Istituto di Sanita, Rome, Italy. 1954. Host strain ATCC No. 11727.

Mycobacterium sp.

11759-B Same source as above, Phagus lacticola. 1954. Host strain Milch.

11760-B Same source as above, Phagus pellegrini. 1954. Host strain Pellegrino.

11761-B Same source as above, Phagus rabinowitschi. 1954. Host strain Rabinowitsch.

Neisseria perflava Bergey et al.

12739-B R.L. Stone, strain A, Indiana Univ. 1957. Jour. Bact., 1956, 71, 516. Host strains 7A1 and 7A2.

BACTERIOPHAGES

- Pasteurella pestis (Lehmann and Neumann) Holland
11953-B J.B. Gunnison, Univ. Calif., San Francisco. 1954. Jour. Infect. Dis., 1951, 88, 254. Host strain A1122.
- Pseudomonas aeruginosa (Schroeter) Migula
12055-B₁, -B₂, and -B₃ Lois Dickinson, strains Pa, Pb, and Pc, Boots Pure Drug Co., Nottingham, England. 1955. Jour. Gen. Microbiol., 1952, 6, 1. Host strain C10.
- 12175-B₁, -B₂, -B₃, and B₄ New York Botanical Garden (I. N. Asheshov collection), strains 1, 2, 2A, and 2B. 1955. Originally from J. W. MacNeal collection.
- Rhizobium leguminosarum Frank emend. Baldwin and Fred
11954-B J.A. Kleczkowski, strain 317, Rothamstead Experimental Sta., Hertfordshire, England. 1954. Jour. Gen. Microbiology, 1953, 8, 135. Host strain P11.
- Salmonella paratyphi (Kayser) Castellani and Chalmers
12176-B N.Y. Botanical Garden (I.N. Asheshov collection), strain Paratyphoid A. 1955. Originally from J. W. MacNeal collection.
- Salmonella schottmuelleri (Winslow et al.) Bergey et al.
12178-B Same source as above, Paratyphoid B strain 2. (Adam's strain PB - Jour. Immunol. 1951, 66, 477.) 1955. Host strain 2.
- 12410-B Same source as above, Paratyphoid B strain 1. 1955.
- Salmonella typhosa (Zopf) White
12179-B Same source as above, strain 1. 1955. Originally from Ena Clark. Host strain Eberthella typhosa 1.
- Salmonella sp. (ser. poona)
12177-B₁, and -B₂. Same source as above, strains 1 and 2. 1955.
- Salmonella sp.
12405-B₁, -B₂, -B₃, and -B₄ N.Y. Botanical Garden (I. N. Asheshov collection), strains X, XI, XII, and XIII. 1955. Host strain 373.
- 12406-B₁, -B₂, -B₃, -B₄, -B₅, -B₆, -B₇, -B₈, and B₉ Same source as above, strains I, II, III, IV, V, VI, VII, IX, and XV. 1955. Host strain 374.
- Serratia marcescens Bizio
11634-B M.M. Wasserman, strain IV, Beth Israel Hospital, N.Y. City. 1953. Jour. Bact., 1953, 66, 119; Jour. Bact., 1954, 68, 320. Host strain 4.
- Shigella dysenteriae (Shiga) Castellani and Chalmers
12180-B₁, and -B₂ N.Y. Botanical Garden (I.N. Asheshov collection). strains S-13 and 2. 1955. Originally from W.J. Elford. (Strain S-13 is one of Burnet's original types. See Jour. Path. Bact., 1933, 37, 179.) Host strain Y6R2.
- Shigella flexneri Castellani and Chalmers
12181-B₁, -B₂, and -B₃ Same source as above, strains 2, 3, and 4. 1955. Originally from M. Rakieten.
- 12661-B M.H. Adams, strain D20, N.Y. University. 1956. Jour. Bact., 1955, 70, 253. Host strain W.

BACTERIOPHAGES

Staphylococcus aureus Rosenbach

- 6538-B Ruth E. Gordon, ATCC. 1944. Host strain FDA 209.
11987-B A.P. Krueger, strain Pl, Univ. Calif. 1954. Jour. Gen. Physiol., 1954, 37, 685. Host strain Kl.
11988-B Same source as above, strain Pl4. 1954. Host strain WF145.
12145-B through 12150-B N.Y. Botanical Garden (I.N. Asheshov collection), strains 1 through 6 respectively. 1955.
12151-B through 12154-B Same source as above, strains 8 through 11 respectively. 1955.
12155-B and 12156-B Same source as above, strains 13 and 14. 1955.
12157-B through 12159-B Same source as above, strains 16 through 18. 1955.
12160-B Same source as above, strain 20. 1955.
12161-B Same source as above, strain S3K. 1955. Originally from A. Schatz. N.Y. Botanical Garden (I.N. Asheshov collection).
12411-B Strain 12. 1955.

Staphylococcus muscae Glaser

- 12162-B Same source as above. 1955. Originally from N.A. Boulgakov Collection.

Streptococcus cremoris Orla-Jensen

- 11602-B C.C. Prouty, strain hp, State College of Washington, Pullman. 1953. Host strain HP.
11603-B Same source as above, strain w, 1953. Host strain W.

Streptococcus lactis (Lister) Löhnis

- 11955-B F.E. Nelson, strain F-68, Iowa State College, Ames. 1954. Host strain FD-56.

Streptococcus pyogenes

- 12202-B NCTC, strain A1. 1955. Host strain NCTC 8370 (R/50/154) Type I.
12203-B NCTC, strain A6. 1955. Host strain NCTC 8709, Type 6 glossy.
12204-B NCTC, strain A25. 1955. Host strain NCTC 8306, Mathews Type 25.
12205-B NCTC, strain A27. 1955. Host strain NCTC 8328, (SF 40) Type 27.
12206-B NCTC, strain A5. 1955. Host strain Dekens, Type 5.

Streptococcus sp.

- 12163-B N.Y. Botanical Garden (I.N. Asheshov collection), streptophage strain 2. 1955. Originally from N.A. Boulgakov Collection. Host strain 2.
12164-B Same source as above, streptophage strain 3. 1955. Host strain 3.
12165-B Same source as above, streptophage strain 4. 1955. Host strain 4.
12166-B Same source as above, streptophage strain 6. 1955. Host strain 6.
12167-B N.Y. Botanical Garden (I.N. Asheshov collection), streptophage strain 7. Originally from N.A. Boulgakov Collection. Host strain 7.

BACTERIOPHAGES

Streptococcus sp. (Continued)

- 12168-B Same source as above, enterococcus phage 5/7. 1955.
Host strain 7.
- 12169-B Same source as above, enterococcus phage 1A. 1955.
Host strain Enterococcus 1.
- 12170-B Same source as above, enterococcus phage 1B. 1955.
Host strain Enterococcus 1.
- 12171-B₁ and B₂ Same source as above, enterococcus phage strains 2A and 2B. 1955. Host strain Enterococcus 2.
- 12182-B Same source as above, enterococcus phage strain 4. 1955.
Host strain Enterococcus 4.

Streptomyces griseus (Krainsky) Waksman and Henrici

- 11984-B F. Carvajal, strain 22653, Schenley Labs. Mycologia 1953, 45, 209. Host strain SL-842.
- 12173-B N.Y. Botanical Garden (I.N. Asheshov collection). 1955.
Originally from H.B. Woodruff, Merck and Co.

Vibrio comma (Schroeter) Winslow et al.

- 12174-B₁, -B₂, -B₃, -B₄, -B₅, -B₆, -B₇, -B₈, -B₉, -B₁₀, and B₁₁ N.Y. Botanical Garden (I.N. Asheshov collection), strains B, C, D, E, F, G, H, K, M, R, and J, respectively. Originally from J. White collection. 1955. Host strain 1077.

Vibrio sp. (saprophytic)

- 11985-B A.P. Krueger, Univ. California. 1954. Proc. Soc. Exp. Biol. Med., 1952, 81, 254, 371.

Xanthomonas pruni (Erw. Smith) Dowson

- 10016-B₁, -B₂, -B₃, -B₄, -B₅, and -B₆ S.S. Goldberg, strains XP1, XP2, XP3, XP4, XP5, and XP8, Camp Detrick, Frederick, Maryland. 1955. Phytopathology 1953, 43, 27. Host strain XP11.

BACTERIOPHAGES

Lysogenic Bacteria

<u>Bacillus cereus</u> Frankland and Frankland	
11950	Elinor McCloy, strain W, School of Hygiene and Tropical Medicine, Univ. of London. 1954. (B. anthracis 11949*.)
<u>Bacillus cereus</u> var. <u>mycoides</u> (Flügge) Smith et al.	
12828	D. M. Bertucci, Univ. of Oregon. 1954. (B. cereus var. mycoides 12826* and 12827*.)
<u>Bacillus megaterium</u> de Bary	
11561a	P. B. Cowles, strain C9(M1), Yale Univ. 1953. (B. megaterium 11478*.)
11561b	Same source as above. Strain C9(M2). 1953. (B. megaterium 11478*.)
11561c	Same source as above. Strain C9(M3). 1953. (B. megaterium 11478*.)
11561d	Same source as above. Strain C9(M4). 1953. (B. megaterium 11478*.)
11561e	Same source as above. Strain C9(M5). 1953. (B. megaterium 11478*.)
11562	Same source as above. Strain 899. 1953. (B. megaterium 11478*.)
<u>Corynebacterium diphtheriae</u> (Flügge) Lehmann and Neumann	
11952	N. B. Groman, strain C4 beta, Univ. of Washington, Seattle. 1954. (C. diphtheriae 11951*.)
<u>Escherichia coli</u> (Migula) Castellani and Chalmers	
10798	C. E. Clifton, strain K-12(Lambda), Stanford Univ. 1950. (E. coli 12435*.)
11125	G. Bertani, Lisbonne and Carrère's lysogenic strain, Univ. of Illinois. 1950. (E. coli 11126*.)
<u>Shigella dysenteriae</u> (Shiga) Castellani and Chalmers	
11456b	G. Bertani, strain SH(P2). 1950. (E. coli 11456a*.)

Miscellaneous Phage-sensitive Strains

<u>Bacillus cereus</u> var. <u>mycoides</u> (Flügge) Smith et al.	
12827	D. W. Bertucci, strain A, parent adherent series, Univ. of Oregon. 1954. (B. cereus var. mycoides 12828#.)
<u>Escherichia coli</u> (Migula) Castellani and Chalmers	
11126	G. Bertani, Univ. of Illinois. 1952. (E. coli 11125#.)
12435	J. Lederberg, strain W1485, Univ. of Wisconsin. 1956. (E. coli 10798#.)
<u>Shigella dysenteriae</u> (Shiga) Castellani and Chalmers	
11456a	G. Bertani, strain SH, Univ. of Illinois. 1953. (S. dysenteriae 11456b#.)

* Indicator strain (See bacteriophage list or list of miscellaneous phage-sensitive strains).

Lysogenic strain (See list of lysogenic strains).

FILAMENTOUS FUNGI AND YEASTS

- Absidia blakesleeana Lendner
10148a (+) and 10148b (-) NRRL, strains 1304 and 1306. 1946.
- Absidia butleri Lendner
8989 V.M. Cutter, Jr., strain 175, Cornell Univ. 1942.
- Absidia coerulea Bainier
1359b (-) A.F. Blakeslee, CIW. 1938.
10738a (+) and 10738b (-) NRRL, strains 1315(+) and 1312(-). 1949.
- Absidia corymbifera (Cohn) Saccardo and Trotter
7909 (A. lichtheimii) A.F. Blakeslee, CIW. 1940.
8988 V.M. Cutter, Jr., strain 217, Cornell Univ. 1942.
- Absidia cylindrospora Hagem
11516 E.S. Reynolds, Univ. of Miami, Fla. 1953.
- Absidia glauca Hagem
6776a (+) and 6776b (-) A.F. Blakeslee, CIW. 1938.
7852a (+) and 7857b (-) A.F. Blakeslee. 1938.
7925 V.M. Cutter, Jr., strain 21, Cornell Univ. 1941.
- Absidia italiana (Perin and Costantin) Dodge
8994 and 8995 V.M. Cutter, Jr., strains 145 and 146, Cornell Univ. 1942.
- Absidia japonica (Saito) Lendner
11619 K. Sato, strain 5419, IF0. 1953.
- Absidia orchidis (Vuillemin) Hagem
6647 J.E. Machacek, Canada Dept. Agric., Winnipeg. 1938.
6811 (-) A.F. Blakeslee, strain C 1016, CIW. 1938.
8990 V.M. Cutter, Jr., strain 156, Cornell Univ. 1942.
- Absidia ramosa (Lindt) Lendner
11613 (+) NRRL, strain 1332. A.F. Blakeslee, strain C 1059. 1953.
- Absidia repens van Tieghem
6780a (+) and 6780b (-) A.F. Blakeslee, CIW. 1938.
- Absidia spinosa Lendner
6648 J.E. Machacek, Canada Dept. Agric., Winnipeg. 1938.
- Absidia ucrainica (Naumov)
8991 V.M. Cutter, Jr., strain 144, Cornell Univ. 1942.
- Absidia sp.
10239 W.W. Diehl, strain 512 C, USDA. 1947. From Siam, used in malting rice.
- Achlya ambisexualis J.R. Raper
11399 (+) and 11400 (-) J.R. Raper, strains 734 and E87, Univ. of Chicago. 1952.
- Achlya americana Humphrey
10977 J.N. Couch, Univ. of North Carolina. 1951.
- Achlya bisexualis Coker
11397 (+) and 11398 (-) J.R. Raper, strains 355 and E247, Univ. of Chicago. 1952.
- Achlya crenulata Ziegler
11315 CBS. 1952.
- Achlya flagellata Coker
10978 J.N. Couch, Univ. of North Carolina. 1951.

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- Achlya racemosa Hildebrand
 11392 CBS. 1952.
- Acladium castellanii Pinoy
 760 A. Castellani, Tulane Univ. 1926.
 11600 CBS. 1953. A. Castellani.
- Acremoniella brevis: See Monotospora brevis
- Acremoniella lutzi Arêa Leão and Lobo
 9462 A.E. de Arêa Leão, strain 866, IOC. 1947.
 From clinical maduramycosis, Brazil.
- Acremoniella rugulosa Arêa Leão
 9469 A.E. de Arêa Leão, strain 1612, IOC. 1947. From clinical mycetoma, Brazil.
- Acremonium potronii: See Cephalosporium potronii
- Acastalagnus cantharinus Corda (Nectria inventa Pertybr. &age)
 1125* CBS. 1952.
- Acrothecium arenarium M. and F. Moreau
 10713* CBS. 1949.
- Acrothecium capsici Turconi
 10714 CBS. 1949.
- Acrothecium robustum Gilman and Abbott
 10715 CBS. 1949.
- Actinomucor elegans (Eidam) Benjamin and Hesseltine
 11379 (A. repens) K. Sato, strain 4020, IFO. 1952.
- Aleurisma carnis (Brooks and Hansford) Bisby
 11501* and 11502 (Sporotrichum carnis). CMI, strains 23281 and 46340. 1953. From refrigerated meat and soil, respectively.
 11507 and 11508 CMI, strains 32065 and 46341. 1953. From stored eggs and soil, respectively.
- Allescheria boydii Shear (Monosporium apiospermum)
 9258 C. W. Emmons, strain 8203, NIH. 1943. From clinical mycetoma, Canada.
 9468 A. E. de Arêa Leão, strain 1603, IOC. 1947.
 10808 Lucille K. Georg, strain A-362, CDC. 1950. From soil.
 11657 L. Ajello, strain A-722, CDC. 1953. From soil.
 11961 F. J. Herrero, Univ. Nac. Tucuman, Argentina. 1954. From Madura foot.
- Allomyces anomalus Emerson¹
 10982 J. N. Couch, Univ. of North Carolina. 1951.
- Allomyces arbusculus Butler
 10983 J. N. Couch, Univ. of North Carolina. 1951.
- Allomyces javanicus Kniep
 10984 J. N. Couch, Univ. of North Carolina. 1951.
- Allomyces moniliformis Coker and Braxton
 10985 J. N. Couch, Univ. of North Carolina. 1951.
- Alternaria brassicae (Berkeley) Saccardo
 12250 (Macrosporium herculeum) E. G. Simmons, strain 1733, QMRDC. 1955. CBS; Bolle strain III, monospore isolate from Cochlearia officinalis.

¹ Allomyces cultures are sent out as dried thalli on filter paper and are not bacteria-free.

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- Alternaria brassicicola (Schweinitz) Wiltshire
 6650 J.E. Machacek, Canada Dept. Agric., Winnipeg. 1938. CBS.
 12251 (Alternaria circinans) E.G. Simmons, strain 280, QMRDC. 1955.
- Alternaria consortialis (Thuemen) Groves and Hughes
 12654 (Stemphylium consortiale) E.G. Simmons, strain 147-C, QMRDC. 1956.
- Alternaria dianthicola Neergaard
 11782 F. Beran, Bundesanst. Pflanzenschutz, Vienna. 1954.
- Alternaria gossypina (Thuemen) Hopkins
 6655 J.E. Machacek, Canada Dept. Agric., Winnipeg. 1938.
- Alternaria humicola Oudemans
 11892 CBS. 1954.
- Alternaria iridis Cooke and Ellis
 6657 J.E. Machacek, Canada Dept. Agric., Winnipeg. 1938.
- Alternaria kikuchiana Tanaka
 11570 K. Sato, strain 5779, IFO. 1953.
- Alternaria linicola Groves and Skolko
 11802 Constance A. Bowerman, Canada Dept. Agric., Ottawa. 1954.
- Alternaria porri (Ellis) Sawada
 11783 F. Beran, Bundesanst. Pflanzenschutz, Vienna. 1954.
 11800 Constance A. Bowerman, strain 53-75, Canada Dept. Agric., Ottawa. 1954.
- Alternaria radicina: See Stemphylium radicum
- Alternaria senecionis Neergaard
 11784 F. Beran, Bundesanst. Pflanzenschutz, Vienna. 1954.
- Alternaria solani (Ellis and Martin) Sorauer
 6396 J.G. Harrar, Virginia Polytech. Inst., Blacksburg. 1938.
 11708 P.W. Brian, strain 408, Butterwick Res. Lab., Welwyn, Herts., England, 1951. CMI strain 46816. Production of alternaric acid.
 11785 F. Beran, Bundesanst. Pflanzenschutz, Vienna. 1954.
- Alternaria tenuis Nees ex Corda
 6663 J.E. Machacek, Canada Dept. Agric., Winnipeg. 1938. CBS.
 11612 F.A. Weiss, ATCC. 1953. From peony leaf spot.
 11680 F.A. Weiss, ATCC. 1953. From onion leaf.
- Alternaria tenuissima (Fries) Wiltshire
 11854 CBS. 1954. Monospore isolate from parsley, by P. Neergaard, 1940.
- Alternaria zinniae Pape
 11786 F. Beran, Bundesanst. Pflanzenschutz, Vienna. 1954.
 11801 Constance A. Bowerman, strain M-29, Canada Dept. Agric., Ottawa. 1954.
- Alternaria sp.
 9100 NRRL, strain 1284. 1943. Hopkins strain, from C. Thom Collection.
- Amauroascus niger Schroeter
 12252 L.W. Durrell, Colorado A. and M. College. 1955. Cf. R.K. Benjamin, El Aliso, 1956, 3, 301.
- Ampelomyces quisqualis Cesati
 11098 (Cicinnobolus cesati) CBS. 1951.

FUNGI AND YEASTS

- Anixiopsis multispora: See Pseudoeurotium multisporum
- Anthostomella contaminans (Durieux and Montagne) Saccardo
7888 J.A. Stevenson, strain 5316, USDA. 1940.
- Aphanomyces cladogamus Drechsler
11099 CBS. 1951.
- Aphanomyces cochlioides Drechsler
11118 CBS. 1952.
- Aphanomyces euteiches Drechsler
11846 CBS. 1954. P. f. 2, from *Viola*.
- Apodachlya brachynema (Hildebrand) Pringsheim
10949 J.N. Couch, Univ. of North Carolina. 1951.
- Arachniotus citrinus Massee and Salmon (cf. *Amauroascus* and
Byssochlamys)
12090 B. West, strain A 828, CDC. 1955.
- Armillaria mellea (Fries) Quélet
11113 and 11114 Frances F. Lombard, strains 70973-R and
Madison 703, USDA. 1951.
- Arthrobotrys conoides Drechsler
11-1- CBS. 1952.
- Arthrobotrys robusta Duddington
11856* CBS. 1954. CMI strain 36118; C. L. Duddington strain 63.
- Arthrobotrys superba Corda var. oligospora (Fresenius) Lindau
11572 K. Sato, strain 4835, IFO. 1953.
- Aschersonia aleyrodis Weöber
11323 CBS. 1952.
- Ascochyta gossypii Sydow
12786 Katharina Bollenbacher, strain 1611 Ma, Univ. of Arkansas.
1957. From cotton.
- 12787 C.D. Ranney, Texas Agric. Expt. Sta. 1957. From cotton.
- Ascochyta imperfecta Peck
12087 Helen S. Yu, USDA. 1955.
- Ascochyta pisi Libert
10954 D.J. Hagedorn, strain 47-43, Univ. of Wisconsin. 1951.
- Ascocybe grovesii Wells: See *Cephaloascus fragans*
- Ascospaera apis (Maasen ex Claussen) Olive and Spiltoir
11933 W.F. Jeffers, Univ. of Maryland, 1954. Chas. Pfizer Co.
strain 29422. *Mycologia*, 1955, 42, 238.
- Ascotricha guamensis Ames
11219* L.M. Ames, strain 3, ERDC. 1952. *Mycologia* 1951, 43, 30.
- Ashbya gossypii (Ashby and Nowell) Guilliermond²
8717 W.J. Robbins, New York Botanical Garden. 1942. Production
of riboflavin (also the following strain, derived from it.)
- 10895 NRRL, strain Y-1056. 1951.
- Aspergillus albus Wilhelm: See *A. candidus*
- Aspergillus alliaceus Thom and Church
1024 C. Thom, strain 5506, USDA. 1938.
- 10060 C. Thom, strain 4656, USDA. NRRL strain 315.

² Approval of the U.S. Department of Agriculture is prerequisite to sending this culture to certain states.

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- Aspergillus amstelodami (Mangin) Thom and Church
- 1001 C. Thom, strain 4013, USDA. 1938.
- 10065 C. Thom, strain 109, USDA. 1946. NRRL strain 89.
- Aspergillus asperescens Stolk
- 11079 (*A. humicola*) P. W. Brian, strain 385, Butterwick Res. Lab., England. 1951. Production of humicolin.
- Aspergillus auricomus (Guégen) Saito
- 11094 K. Sato, strain 4418, IFO. 1954.
- Aspergillus awamori Nakazawa
- 11358 K. Sakaguchi, strain K-6615, Univ. of Tokyo. 1952.
- 11382 K. Sato, strain 4398, IFO. 1952.
- Aspergillus awamori Nakazawa var. hominis Chaves-Batista and Maia
- 12074* A. Chaves-Batista, strain 238, Univ. of Recife, Brazil. 1955.
- Aspergillus caespitosus Raper and Thom
- 11256* NRRL, strain 1929. 1952.
- Aspergillus candidus Link ex Fries
- 1002 C. Thom, strain 106, USDA. 1938. NRRL strain 303.
- 11380 and 11381 (*Aspergillus albus*) K. Sato, strains 4310 and 4311, IFO. 1952.
- 12070 A. Chaves-Batista, strain 259, Univ. of Recife, Brazil. 1955.
- Aspergillus carbonarius (Bainier) Thom
- 1025 C. Thom, strain 4030.1, USDA. 1938. NRRL strain 369.
- Aspergillus chevalieri (Mangin) Thom and Church
- 9908 C. Thom, strain 4122.1, USDA. 1945. NRRL strain 77.
- Aspergillus clavato-nanica Chaves-Batista et al.
- 12413* A. Chaves-Batista, strain DMUR 532, Univ. of Recife, Brazil. Produces diethylarsine on arsenic substrate.
- Aspergillus clavatus Desmazières
- 1007 NRRL, strain 1656. 1955. QMRDC strain 1276.
- 9192 and 9198 S.A. Waksman, strains 129 (145) and 164 (147), Rutgers Univ. 1943. Production of clavacin.
- 9598, 9599 and 9600 NCTC, strains 978 (Thom 107, NRRL 1), 5598A (NZ 789), and 3886 (Ac. 65). 1944. Production of clavacin.
- 9601 and 9602 NCTC, strains 5598 (NZ 737) and 3887 (Ac. 86). 1944.
- 10059 C. Thom, strain 4754.3, USDA. 1946. NRRL strain 4.
- Aspergillus conicus Blockwitz
- 11911 K. Sato, strain 4047, IFO. 1954.
- Aspergillus echinulatus (Delacroix) Thom and Church
- 1021 C. Thom, strain 4481, USDA. 1938. NRRL strain 131.
- Aspergillus effusus Tiraboschi
- 1010 C. Thom, strain 130, USDA. 1945. NRRL strain 506.
- Aspergillus fasciculatus Chaves-Batista and Maia
- 11970 and 12073 A. Chaves-Batista, strains 101 and 236, Univ. of Recife, Brazil. 1954.
- Aspergillus fischeri Wehmer
- 1020* C. Thom, strain 4651.2, USDA. 1938. NRRL strain 181.
- Aspergillus flavipes (Bainier and Sartory) Thom and Church
- 1030 C. Thom, strain 114, USDA. 1938. NRRL strain 286.
- 11013 D. Perlman, strain MD 2472, Squibb Inst. Med. Res., New Brunswick, N.J. 1951. U.S. Patent 2,768,928.

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Aspergillus flavus Link ex Fries

- 1003 C. Thom, strain 292-108, USDA. 1938. NRRL strain 482.
9170 E.C. White, Johns Hopkins Univ. 1943. Production of aspergillic acid. J. Bact., 1943, 45, 433.
9296 S.A. Waksman, strain 137, Rutgers Univ. 1944. Production of flavicin.
9376 NRRL, strain 458. 1947.
9643 W.H. Weston, strain 997, Harvard Univ. 1944. Other strain designations: Aust. 3, QMRDC 380. Military specifications for fungus resistance tests.
9807 M.F. Day, strain 42, Australian Sci. Res. Liaison Office. 1945. Resistant to salicylanilide.
10124 NRRL, strain 484. 1946. Thom strain 3538. Production of kojic acid. J. Am. Chem. Soc., 1931, 53, 774.
11495, 11496 and 11497 NRRL, strains 492, 627 and 1946. 1953.
11498 and 11499 NRRL, strains 2210 and 2211. 1953.
11655 Mary H. Downing, strain 4m, QMRDC. 1954. NRRL strain A-433. Military specifications for fungus resistance tests.

Aspergillus flavus-oryzae group

- 11500 NRRL, strain 453. 1953.

Aspergillus foetidus Thom and Raper

- 11359 (A. aureus Nakazawa) K. Sakaguchi, strain R-4832, Univ. of Tokyo. 1952.

Aspergillus fumigatus Fresenius

- 1022 C. Thom, strain 118, USDA. 1932. NRRL strain 163.
1028 (Aspergillus cellulosae) C. Thom, USDA. 1938. NRRL strain 164.
6285 H.W. Schoening, USDA. 1938. From pulmonary lesion of chicken.
9197 S.A. Waksman, strain 84 (36), Rutgers Univ. 1943. Production of fumigacin and gliotoxin.
10827 C.W. Emmons, strain 5225, NIH. 1950. From pulmonary lesion of penguin.
10894 CMI, strain 45338. 1951. J.H. Birkinshaw, strain M-400. Production of spinulosin. Biochem. J., 1945, 39, 70.

Aspergillus giganteus Wehmer

- 10059 C. Thom, strain 5581.13A, USDA. 1946. NRRL strain 10.

Aspergillus gracilis Bainier

- 11905 (A. caesiellus) K. Sato, strain 4882, IFO. 1954.

Aspergillus griseus Bainier var. sartoryi (Bainier) Chaves-Batista et al.

- 11969 and 12071 A. Chaves-Batista, strains 246 and 262, Univ. of Recife, Brazil. 1954.

Aspergillus heteromorphus Chaves-Batista and Maia

- 12064 A. Chaves-Batista, strain 2699, Univ. of Recife, Brazil. 1954.

Aspergillus inuui Sakaguchi et al.

- 11360* K. Sakaguchi, strain Ro-436, Univ. of Tokyo. 1952.

Aspergillus itaconicus Kinoshita

- 10021* NRRL, strain 161. 1946. CBS. K. Kinoshita.

Aspergillus japonicus Saito

- 1034 C. Thom, strain 4030.3, USDA. 1938. NRRL strain 358. A.F. Blakeslee.

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- Aspergillus luchuensis Inui
 1035 C. Thom, strain 4848.8, USDA. 1938.
 10001 C. Thom, strain 4291.3, USDA. 1946. NRRL strain 356.
- Aspergillus mangini (Mangin) Thom and Raper
 10076 C. Thom, strain 5619.19, USDA. 1946. NRRL strain 114.
- Aspergillus montevidensis Talice and MacKinnon
 10077* C. Thom, strain 5290, USDA. 1946. NRRL strain 108.
 From clinical otomycosis.
- Aspergillus nakazawai Sakaguchi et al.
 11361 K. Sakaguchi, strain K-4134, Univ. of Tokyo. 1952.
- Aspergillus nidulans (Eidam) Winter
 10074 C. Thom, strain 4640.5, USDA. 1946. NRRL strain 187.
 11267 R. W. Thoma, strain M 4194, Squibb Inst. Med. Res., New Brunswick, N.J. 1952.
- Aspergillus niger van Tieghem
 1004 C. Thom, strain 111, USDA. 1938. NRRL strain 322;
 CMI 50565.
 1015 C. Thom, strain 3528.7 (TC 167), USDA. 1932. CMI 31821.
 Production of citric acid. J. Biol. Chem., 1917, 31, 15.
 6275 C. Thom, strain 4247, USDA. 1938. Steinberg strain, used
 in mineral nutrition studies; also QMRDC 458 (NRRL 334).
 Fungus resistance tests.
 6276 C. Thom, strain 4704.878, USDA. 1938. Herrick and May
 strain; NRRL 368. Production of citric acid.
 8740 and 9029 NRRL, strains 67 and 3. 1943. Production of
 gluconic and citric acids. J. Bact., 1946, 52, 557.
 9142 NRRL, strain 599. 1943. Production of citric acid from
 molasses.
 9642 W.H. Weston, Harvard Univ. 1944. Strain Aust. 26, QMRDC
 386. Military specifications for fungus resistance tests.
 10254 NRRL, strain 337. 1947. Production of amylase. J. Bact.,
 1947, 54, 159.
 10535 L.M. Ames, ERDC. 1948. Mold resistance tests on paint.
 10553 CBS, strain radium 1/1. 1949.
 10575 CMI, strain 17454. 1949. Mold resistance tests on textiles.
 10577 CMI, strain 27809. 1949. NCTC strain 7193. J.A. Benkiser,
 Ladenberg, Germany, strain XXII. Citric acid production.
 10579 CMI, strain 31275. 1949. NCTC strain 2389. From clinical
 otomycosis.
 10581 CMI, strain 31283. 1949. Mulder strain M. D.J.D. Nicholas,
 Long Ashton Research Sta. Assay of Mg, Cu, Zn and Mo in
 soils. Ann. Ferment., 1938, 4, 513.
 10864 NRRL, strain 330. 1951. Production of maltase.
 11394 D. Perlman, Squibb Inst. Med. Res. 1952. Wisconsin strain
 72-2. Production of hydroxyprogesterone. J. Am. Chem.
 Soc., 1952, 74, 3962.
 11414 S.M. Martin, Natl. Res. Council, Canada. 1952. Wisconsin
 strain 72-4. Production of citric acid from molasses. J.
 Bact., 1946, 52, 555.
- Aspergillus niger van Tieghem var. altipes Schiemann
 10549 CBS. 1949.

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- Aspergillus niger mut. cinnamomeus (Schiemann) Thom and Raper
 1027 C. Thom, strain 3534.6, USDA. 1938. NRRL strain 348.
- Aspergillus niger van Tieghem mut. fusca Blochwitz
 10548 CBS. 1949.
- Aspergillus niger mut. schiemanni (Schiemann) Thom and Raper
 1040 C. Thom, strain 3534c, USDA. 1938. NRRL strain 361.
- Aspergillus niger van Tieghem f. tubingen Schober
 10550 CBS. 1949.
- Aspergillus niveo-glaucus Thom and Raper
 10075 C. Thom, strain 7053.2, USDA. 1946. NRRL strain 127.
- Aspergillus niveus Blochwitz
 12276 NRRL, strain 515. 1955.
- Aspergillus ochraceo-petaliformis Chaves-Batista and Maia
 12066* A. Chaves-Batista, strain 270, Univ. of Recife, Brazil. 1955.
- Aspergillus ochraceus Wilhelm
 1008 and 1009 C. Thom, strains 112 (asclerotial) and 4399 (sclerotial), USDA. 1938.
- 12337 NRRL, strain 416. 1955.
- Aspergillus oryzae (Ahlgren) Cohn
 1011 C. Thom, strain 113, USDA. 1932. CBS.
- 7252 T.K. Walker, Univ. of Manchester, England. Production of kojic acid.
- 7561 L.A. Underkofler, strain 22, Iowa State Coll. 1939.
- 9102 NRRL, strain 692. 1943. Production of amylase.
- 9362 NRRL, strain 1988. 1947. Proteolytic activity.
- 10063 C. Thom, strain 290-Ao Old, USDA. 1946. K. Oshima. NRRL strain 458.
- 10196 L.M. Ames, ERDC. 1946. Mold resistance tests on paint.
- 11487, 11488, 11489 and 11490 NRRL, strains 494, 694, 695 and 696. 1953.
- 11491, 11492, 11493 and 11494 NRRL strains 697, 2160, 2217 and 2220. 1953.
- 11601 L.A. Underkofler, strain 38b, Iowa State Coll. 1953. Production of alpha amylase. J. Agric. and Food Chem., 1953, 1, 87.
- 11866 Luz Baens-Arcega, Inst. Sci. and Tech., Manila. 1954. NRRL strain A-5777. Proteolytic activity. Philippine J. Sci., 1956, 85, 189.
- Aspergillus parasiticus Speare
 1018* C. Thom, strain 3509a, USDA. 1938. NRRL strain 502. A.T. Speare. Parasitic on mealy bugs on sugar cane.
- Aspergillus penicilloides Spegazzini
 9122 NRRL, strain 151. 1943. Thom strain 7.
- Aspergillus phoenicis (Corda) Thom
 10698 NRRL, strain 363. 1949.
- Aspergillus pseudoglaucus Blochwitz
 10066 C. Thom, strain 5343, USDA. 1946. NRRL strain 40.
- Aspergillus quadrilineatus Thom and Raper
 12067 A. Chaves-Batista, strain 271, Univ. of Recife, Brazil. 1955.

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- Aspergillus repens (Corda) de Bary
 9294 NRRL, strain 13, 1944.
 10079 C. Thom, strain 5305.5, USDA. 1946. NRRL strain 17.
- Aspergillus ruber (Bremer) Thom and Church
 9461 NRRL, strain 48. 1944. C. Thom, strain 4168.
 10078 C. Thom, strain 134, USDA. 1946. NRRL strain 65.
- Aspergillus saitoi Sakaguchi et al.
 11362* K. Sakaguchi, strain H-217, Univ. of Tokyo. 1952.
Aspergillus saitoi var. kagoshimaensis Sakaguchi et al.
 11363* K. Sakaguchi, strain K-3931, Univ. of Tokyo. 1952.
- Aspergillus sojae Sakaguchi and Yamada
 11906 K. Sato, strain 4391, IFO. 1954.
- Aspergillus sulphureus (Fresenius) Thom and Church
 1032 C. Thom, strain 4741, USDA. 1938. NRRL strain 386.
- Aspergillus sydowi (Bainier and Sartory) Thom and Church
 1017 C. Thom, strain 5065.10, USDA. 1938. NRRL strain 247.
 9507 O. Felsenfeld, Chicago Medical School. 1944.
 12065 A. Chaves-Batista, strain 268, Univ. of Recife, Brazil. 1955.
- Aspergillus tamarii Kita
 1005 C. Thom, strain 3565, USDA. 1938. NRRL strain 427.
 10836 A.A. Prince, strain AMC 26, Wright-Patterson Air Force Base. 1951. QMRDC strain 1223. Military specifications for fungus resistance tests.
- Aspergillus terreus Thom
 1012 C. Thom, strain 144, USDA. 1946. NRRL strain 255.
 10020 and 10029 NRRL, strains 1960 and 265. 1946. Production of itaconic acid. Arch. Biochem., 1945, 7, 167.
 10070 (Aspergillus hortai) C. Thom, strain 166-5071.1, USDA. 1946. NRRL strain 274. From clinical otomycosis.
 10690 QMRDC, strain 82-J. 1949. Military specifications for fungus resistance tests.
- Aspergillus terreus Thom var. aureus Thom and Raper
 11877 T.W. Johnson, Meharry Med. Coll., Nashville, Tenn. 1953.
- Aspergillus terricola Marchal var. americana Marchal
 10062 C. Thom, strain 4838, USDA. 1946. NRRL strain 424.
- Aspergillus unguis (Emile-Weil and Gaudin) Thom and Raper
 10075 C. Thom, strain 5076.1, USDA. 1946. NRRL strain 216.
 12063 A. Chaves-Batista, strain 264, Univ. of Recife, Brazil. 1955.
- Aspergillus usamii Sakaguchi et al.
 11364 K. Sakaguchi, strain R-0635, Univ. of Tokyo. 1952.
- Aspergillus ustus (Bainer) Thom and Church
 1033 C. Thom, strain 4658.245, USDA. 1938.
 1041 C. Thom, strain 3556, USDA. 1938. NRRL strain 275.
 10032 W.C. Tobie, Kurung strain, American Cyanamid Co., Greenwich, Conn. 1946.
 10769 NRRL, strain 2274. 1950. QMRDC strain 891, also strain J-272. Military specifications for fungus resistance tests.
- Aspergillus variegatus (Berkeley and Broome) Thom and Raper
 10067 C. Thom, strain 5002.3, USDA. 1946. NRRL strain 212.
- Aspergillus variegatus var. major Chaves-Batista and Maia
 12069 A. Chaves-Batista, strain 256, Univ. of Recife, Brazil. 1955.

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- Aspergillus versicolor (Vuillemin) Tiraboschi
 9577 NRRL, strain 238. 1944.
 10072 C. Thom, strain 135-3512, USDA. 1946. NRRL strain 226.
 11730 QMRDC, strain 432. 1954. MIT strain lc.
- Aspergillus violaceo-fuscus Gasperini
 1042 C. Thom, strain 3522.30, USDA. 1938. NRRL strain 360.
- Aspergillus wentii Wehmer
 1023* C. Thom, strain 116, USDA. 1938. NRRL strain 375; CMI
 17295.
 10551 CBS. 1949. Mosseray's albino strain.
 10552 (var. *minimus* Nakazawa et al.) CBS. 1949.
 10583, 10584 and 10587 CMI, strains 16035, 16039 and 23010. 1949.
 10589, 10590 and 10591 CMI, strains 23013, 23012 and 23014. 1949.
- Aspergillus sp.
 12669 P.F. Klens, strain 611, Nuodex Products, Elizabeth, N.J.
 1956. For testing mold proofing.
- Asporomyces uvae: See Candida pulcherrima
- Auricularia auricula-judae (Fries) Schroeter
 11991 K. Sato, strain 5949, IFO. 1954.
- Basidiobolus meristosporus Drechsler
 12243* C. Drechsler, USDA. 1955. J. Washington Acad. Sci.,
 1955, 45, 50.
- Basidiobolus ranarum Eidam
 11230 Frances F. Lombard, USDA. 1952. CBS.
- Beauveria bassiana (Balsamo) Vuillemin
 9835 J.A. Stevenson, USDA. 1945. W.D. Wylie, U.S. Sugar
 Corp., Fla. From larva of sugarcane stalk borer.
- Beauveria densa (Link) Picard
 9452 CBS. 1948.
- Beauveria effusa (Beauvérie) Vuillemin
 9453 CBS. 1948.
- Beauveria stephanoderis (Bally) Petch
 9454 CBS. 1948.
- Blakeslea trispora Thaxter
 11517(+) and 11518(-) NRRL, strains 1348 and 1718. 1953.
- Blastomyces brasiliensis (Splendore) Conant and Howell
 10237 (*Paracoccidioides brasiliensis*) Margaret Upton, St. Luke's
 Hospital, New York, N.Y. 1947.
 11888 C.W. Emmons, strain 6028, NIH. 1954. F. de Almeida,
 strain 966, Brazil.
 11889 C.W. Emmons, strain 6040, NIH. 1954. J.E. Mackinnon,
 strain 630, IHM.
- Blastomyces dermatitidis Gilchrist and Stokes
 4292 (*Blastomyces tulanensis*) A. Castellani, Tulane Univ. 1928.
 7967 J.S. D'Antoni, strain 114, Tulane Univ. 1941.
 10225 C.W. Emmons, strain 6021, NIH. 1947.
- Blastomyces spp.
 4248 E.S. Sanderson, strain 797, Univ. of Virginia. 1927. From
 pus in systemic blastomycosis.

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Blastomyces spp. (Continued)

4371 M.S. Nichols, strain 32131, Wisconsin State Lab. Hygiene.
1925. From bone abscess.

Boletus bicolor Peck

11935 W.F. Jeffers, Univ. of Maryland. 1954. J.G. Palmer,
George Washington Univ.

Botryodiplodia theobromae Patouillard

11318 CBS. 1952.

Botryosphaeria berengeriana de Notaris

12557 CBS. 1952.

Botryosphaeria ribis Grossenbacher and Duggar

11232 Frances F. Lombard, USDA. 1952. From Salix.

Botryosphaeria ribis var. chromogena Shear et al.

11233 Frances F. Lombard, strain 71525, USDA. From chestnut.

Botryosporium pulchrum Corda

12253 L.W. Durrell, Colorado A. and M. Coll. 1955.

Botryotinia globosa Buchwald

11858 (Botrytis globosa) CBS. 1954. F. Buchwald strain 734.

Botrytis allii Munn

9435 P.W. Brian, strain 38, Butterwick Research Lab., England.
1947. Ann. Appl. Biol., 1945, 32, 214. Assay of fungistatic
antibiotics.

Botrytis cinerea Persoon ex Fries

7020 H.S. Fawcett, strain SA 801, Univ. of California, Riverside.
1938. From avocado.

11542 F.A. Weiss, ATCC. 1953. From azalea flowers.

12481 B.M. Duggar, strain N51, American Cyanamid Co., Stamford, Conn. 1956. Oxidation of steroids, U.S. Patent 2,789,940.

Botrytis elliptica (Berkeley) Cooke

11787 F. Beran, Bundesanst. Pflanzenschutz, Vienna. 1954.

Botrytis fabae Sardinia

12304 K. Sato, strain 5894, IFO. 1955.

Botrytis gladiolorum Timmermans (= Sclerotinia draytoni Buddin and Wakefield)

11255 R.A. Young, strain G-4-7, Oregon State College. 1952.

Botrytis paeoniae Oudemans

12482 American Cyanamid Co., Stamford, Conn., strain Z 518.
1956. Oxidation of steroids, U.S. Patent 2,789,940.

Botrytis tulipae (Libert) Lind

11788 F. Beran, Bundesanst. Pflanzenschutz, Vienna. 1954.

Brachysporium oryzae Ito and Ishiyama

11571 K. Sato, strain 5246, IFO. 1953.

Brettanomyces anomalus Custers

10559* NRRL, strain Y-1415. 1949. CBS.

Brettanomyces bruxellensis Kufferath and van Laer

9775 P.R. Burkholder, strain 131, Yale Univ. 1945. Requires
pyridoxine. J. Bact., 1944, 48, 385.

10560* NRRL, strain Y-1411. 1949. CBS.

Brettanomyces bruxellensis var. non-membranaefaciens Custers

10561 NRRL, strain Y-1412. 1949. CBS.

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Brettanomyces clausenii Custers

10562 NRRL, strain Y-1414. 1949. CBS.

Brettanomyces lambicus Kufferath and van Laer

10563 NRRL, strain Y-1413. 1949. CBS.

Brevilegnia linearis Coker

10979 J.N. Couch, Univ. of North Carolina. 1951.

Brevilegnia macrospora van Eek

11270 CBS. 1952.

Byssochlamys fulva Olliver and Smith

10099 C. Thom, strain 5367.6a, USDA. 1946. G. Smith, London Sch. Hyg. and Trop. Med. NRRL strain 1125.

Byssochlamys nivea Westling

12550 (*Arachniotus trisporus*) I.M. Lamb, Harvard Univ. 1956. Cf. R.K. Benjamin, El Aliso, 1956, 3, 301.

Cadophora americana: See Phialophora verrucosa

Caldariomyces fumago Woronichin

11925 (*Fumago vagans*) G. Smith, strain x 13, London Sch. Hyg. and Trop. Med. 1954. CBS.

Calonectria graminicola (Berkeley and Broome) Wollenweber

11346 (*Fusarium nivale*) CBS. 1952.

Calonectria rigidiuscula (Berkeley and Broome) Saccardo

12258 (*Fusarium decemcellulare*) L.W. Durrell, Colorado A. and M. Coll., Fort Collins. 1955.

Candida albicans (Robin) Berkhoult

752 (*Monilia pinoyi*) A. Castellani, Tulane Univ. 1926.

753 (*Monilia metalondinensis*) A. Castellani. 1926.

2091 (*Endomyces albicans*) R. Chodat, strain 132, Univ. of Geneva, Switzerland. 1928.

10231 C.W. Emmons, strain 3147, NIH. 1947. From clinical bronchomycosis.

10259 and 10261 A.E. de Arêa Leão, strains 2024 and 2023, IOC. 1947. J.E. Mackinnon, strains 806 (phase M) and 582 (phase S), IHM.

11651 G.H. Scherr, strain 171D, Creighton Univ., Omaha, Nebr. 1953. Moniliasis of mice.

Candida brumptii Langeron and Guerra

10564 NRRL, strain Y-311. 1951. CBS.

Candida catenulata Diddens and Lodder

10565* NRRL, strain Y-1508. 1953. CBS.

Candida curvata (Diddens and Lodder) Lodder and Kreger-van Rij

10567* (*C. heveanensis* var. *curvata*) NRRL, strain Y-1511. 1952. CBS.

Candida flareri (Ciferri and Redaelli) Langeron and Guerra

9375 A.E. de Arêa Leão, strain 2028, IOC. 1947. NRRL strain Y-1476.

10539 NRRL, strain Y-245. 1948. Production of riboflavin.

Candida guilliermondii (A. Castellani) Langeron and Guerra

6260 (*Monilia guilliermondii*) A. Castellani, Ross Inst., London. 1938. From bronchomycosis.

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Candida guilliermondii (Continued)

- 9058 P.R. Burkholder, strain 488, Yale Univ. 1943. Production of riboflavin. *Science*, 1945, 101, 180.
9390 A.E. de Arêa Leão, strain 2029, IOC. 1947. J.E. Mackinnon, strain 642, IHM.

Candida guilliermondii var. membranaefaciens Lodder and Kreger-van Rij
9337* (*Candida chalmersi* auth., non *Castellani*) A.E. de Arêa Leão, strain 2026, IOC. 1947. J.E. Mackinnon, strain 813-C, IHM. E.M. Mrak. From figs.

- 9766 (*Candida chalmersi* auth., non *Castellani*) P.R. Burkholder, strain 25, Yale Univ. 1945. E.M. Mrak.

Candida heveanensis: See *Cryptococcus laurentii*

Candida humicola (Daszewska) Diddens and Lodder

- 2502 NRRL, strain Y-167. 1949.
9949 NRRL, strain Y-1266. 1946.
10263 (*Candida suaveolens*) A.E. de Arêa Leão, strain 2032, IOC. J.E. Mackinnon, strain 752.

Candida intermedia (Ciferri and Ashford) Langeron and Guerra

- 9442 CBS. 1947.
12089 B.A. Bourne, U.S. Sugar Corp., Clewiston, Fla. Antibiotic to *Physalospora tucumanensis*. *Phytopath.*, 1955, 45, 37.

Candida krusei (Castellani) Berkhout

- 2159 F.W. Tanner, Univ. of Illinois. 1926. NRRL strain Y-105.
6258* A. Castellani, Ross Inst., London. 1938. From clinical bronchomycosis.

Candida krusoides Castellani

- 7345 (*Monilia krusoides*) A. Castellani, Ross Inst., London. 1938.
10755 NRRL, strain Y-1368. Univ. of Wisconsin strain 84, "Candida arborea" 197.
10756 NRRL, strain Y-1366. Univ. of Wisconsin strain 82. "Candida arborea" 198.

Candida lipolytica (Harrison) Diddens and Lodder

- 8661 and 8662 N.C. Laffer, Lederle Labs., Pearl River, N.Y. 1942.
NRRL strains Y-1095 and Y-1094; Purdue Univ. 13 and 14. Lipolytic; production of yeast protein.

- 9773 P.R. Burkholder, strain 251, Yale Univ. 1945.

Candida macedoniensis (Castellani and Chalmers) Berkhout

- (= *Saccharomyces marxianus* Hansen)
748 A. Castellani, Tulane Univ. 1926.
4564 (var. *macedoniensisoides*) A. Castellani, Ross Inst., London. 1929.

Candida melinii Diddens and Lodder

- 10568 NRRL, strain Y-1514. CBS.

Candida mesenterica (Geiger) Diddens and Lodder

- 10569 NRRL, strain Y-1494. CBS.

Candida monosa (Kluyver) Diddens and Lodder

- 2146 NRRL, strain Y-97. 1941.

- 9330 NRRL, strain Y-1495. 1947. CBS.

Candida nododermia (Reese) Lodder and Kreger-van Rij: See also *Pichia membranaefaciens*

- 9888* (*Mycoderma vini*) NRRL, strain Y-94. 1945.

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Candida mycoderma (Continued)

- 10641 (*Mycoderma cerevisiae*) NRRL, strain Y-941. 1951.
 10642 (*Mycoderma lafarii*) NRRL, strain Y-936. 1953.
Candida parapsilosis (Ashford) Langeron and Talice
 4670 (*Blastodenzron intestinalis* var. *epidermicum*) R. Ciferri,
 Dominican Republic. 1931.
 7330, 7333 and 7336 L. Black, strains 24, 31 and 34, Univ. of
 Maryland. 1938.
 10265 A.E. de Arêa Leão, strain 2035, IOC. 1947. J.E. Mackinnon,
 strain 607, IHM.

Candida pelliculosa Redaelii (= *Hansenula javanica*)

- 2149 F.W. Tanner, Univ. of Illinois. 1931. CBS. NRRL strain
 Y-198.
 10262 A.E. de Arêa Leão, strain 2031, IOC. 1947. J.E. Mackinnon,
 strain 641, IHM.

Candida pseudotropicalis (Castellani) Basgal (= *Saccharomyces fragilis*)

- 2512 (*Torula cremoris*) F.W. Tanner, Univ. of Illinois. 1928.
 4135* (*Monilia pseudotropicalis*) A. Castellani, Tulane Univ. 1927.
 From clinical bronchomycosis.
 9767 P.R. Burkholder, strain 26, Yale Univ. 1945. Requires
 biotin, niacin, pantothenic acid, thiamine. J. Bact., 1944, 48,
 385.

Also 19 strains contributed by N.C. Laffer, Lederle Lab., Pearl
 River, N.Y., isolated mostly from dairy products and some from
 human sources; used for production of "food yeast."

Candida pseudotropicalis var. *lactosa* (Harrison) Diddens and Lodder

- 2540 F.W. Tanner, Univ. of Illinois. 1926. NRRL strain Y-196.
 4922* A.J. Kluyver, Delft. 1934.
 7014 F.S. Orcutt, Virginia Polytechnic Inst., Blacksburg. 1938.
 8648 N.C. Laffer, strain 149, Lederle Lab. 1942. NRRL strain
 Y-1203.

Candida pulcherrima (Lindner) Windisch

- 7696 and 7697 (*Asporomyces uvae*) E.M. Mrak, strains 90 B 3R
 and 96 B 3W, Univ. of California, Davis. 1940.
 9889 NRRL, strain Y-987. 1945.

Candida reukaufii (Grüss) Diddens and Lodder

- 10570 NRRL, strain Y-1348. 1956.

Candida rugosa (Anderson) Diddens and Lodder

- 10571* NRRL, strain Y-1496. 1954. CBS.

Candida scottii Diddens and Lodder

- 10572 NRRL, strain Y-1497. CBS.

Candida stellatoidea (Jones and Martin) Langeron and Guerra

- 11006 N.F. Conant, Duke Univ. 1951.

Candida tenuis Diddens and Lodder

- 10573 NRRL, strain Y-1498. CBS.

Candida tropicalis (Castellani) Berkhout

- 750* A. Castellani, Tulane Univ. 1926. From clinical broncho-
 mycosis.

- 1369 Margaret B. Church, USDA. 1928. Ferments pentoses; used
 for production of "food yeast" from sulfite liquor and wood
 sugar.

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Candida tropicalis (Continued)

9968 (*Monilia murmanica*) From USSR. 1946. Used in production of "food yeast."

Candida utilis (Henneberg) Lodder and Kreger-van Rij

8205 (*Torulopsis utilis*) NRRL, strain Y-660. 1941. Seagram and Sons, Inc., strain 35.

8206 NRRL, strain Y-793. 1941. CBS.

9226 R. St. John-Brooks, NCTC. 1943. From Jamaica; used in production of food yeast.

9256 (*Torulopsis utilis* var. *major*) NRRL, strain Y-1084. 1943.

9950 NRRL, strain Y-900. 1946. Production of yeast protein from potato starch washings. *J. Agric. and Food Chem.*, 1954, 2, 70.

Candida zeylanoides (Castellani) Langeron and Guerra

4933 P. Redaelli and R. Ciferri, Univ. Catania, Italy. 1934.

7351* (*Cryptococcus macroglossae*) A. Castellani, Ross Inst., London. 1938.

10674 (*Torulopsis uvae*) NRRL, strain Y-1403. 1953.

Cenococcum graniforme (Sowerby) Ferdinand and Winge

12622 CBS, strain 110. 1956. Denmark

12746 CBS, strain 116. 1957. Sweden.

Cephaloascus fragans Hanawa

12091 (*Ascocybe grovesii*) Doreen E. Wells, strain DAOM 33766, Science Service, Ottawa, Canada. 1954.

Cephalosporium acremonium Corda

10141 J.A. Stevenson, strain 42-765 A, USDA. 1946.

Cephalosporium alvaradi Crandall

11134* Frances F. Lombard, strain ES-201, USDA. 1952. From mal-de-macanna of coffee.

Cephalosporium apii M.A. Smith and Ramsey

10837* J.A. Stevenson, USDA. 1951. M.A. Smith

Cephalosporium calophylli Crandall

11135* Frances F. Lombard, strain ES-134, USDA. 1952. From wilt disease of barillo.

Cephalosporium diospyri Crandall

9066 Frances F. Lombard, strain 71678, USDA. 1951. From wilt of persimmon. *Mycologia*, 1945, 37, 495.

Cephalosporium gregatum Allington and Chamberlain

11073* D.W. Chamberlain, USDA, Urbana, Ill. 1951. From soybean dieback.

Cephalosporium kiliense (Grütz) Hartman

4301 T. Benedek, Leipzig. From soft ulcer (human). *Arch. fl. Dermatol. u. Syphil.*, 1928, 154, 166.

Cephalosporium potronii (Vuillemin) Oomen

12338 CBS. 1955.

Cephalosporium pullulans Emmons

12285* C.W. Emmons, strain A 350, NIH. 1955. R.L. Zaayer, Veterans Hospital, Omaha, Nebr. From clinical pyelonephritis.

Cephalosporium recifei Arêa Leão and Lobo

9940 C.W. Emmons, strain 7307, NIH. 1945. From clinical maduramycosis, Brazil.

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- Cephalosporium chrysostomatum: See *Emericellopsis salicosynnemata*
- Cephalosporium spinosum Negroni
9471* A. E. de Arêa Leão, strain 1720, IOC. 1947. From onychomycosis. Rev. Soc. Arg. Biol., 1933, 9, 10.
- Cephalosporium sp.
11550 CMI, strain 49137. 1953. N.G. Heatley, Oxford Univ. Produces cephalosporin.
- Cephalothecium roseum Corda: See *Trichothecium*
- Ceratocystis coeruleescens (Münch) Bakshi
11066 (*Endoconidiophora virens*) G.H. Hepting, strain 94250. USDA, Asheville, N.C. 1951.
- 12859 R.N. Campbell, strain 3, Univ. of Minnesota. 1957.
- Ceratocystis fagacearum (Bretz) Hunt
11090 (*Endoconidiophora fagacearum*) A.J. Riker, Univ. of Wisconsin. 1951.
- Ceratocystis fimbriata Ellis and Halsted
10504 (*Ceratostomella fimbriata*) J.S. Cooley, strain 2356, USDA. 1950. Thiamine assay, *Mycologia*, 1947, 39, 699.
- Ceratocystis ips (Rumbold) Moreau
11091 Frances F. Lombard, strain 745, USDA. 1951.
- 12860 R.N. Campbell, strain 15, Univ. of Minnesota. 1957.
- Ceratocystis major (van Beyma) Moreau
11932 W.F. Jeffers, Univ. of Maryland. 1954. CBS.
- Ceratocystis minor (Hedgcock) Hunt
11065 (*Ceratostomella pini*) Frances F. Lombard, strain 62072, USDA. 1951.
- Ceratocystis moniliformis (Hedgcock) Moreau
12861 R.N. Campbell, strain 35, Univ. of Minnesota. 1957.
- Ceratocystis paradoxa (Dade) Moreau
11148 (*Ceratostomella paradoxa*) Frances F. Lombard, strain 6608, USDA. 1952. C.F. Andrus.
- Ceratocystis piceae (Münch) Bakshi
12862 R.N. Campbell, strain 40, Univ. of Minnesota. 1957.
- Ceratocystis pilifera (Fries) Moreau
8713 R.W. Davidson, strain 608-E, USDA. 1942.
- 12863 R.N. Campbell, strain 18, Univ. of Minnesota. 1957.
- Ceratocystis pluriannulata (Hedgcock) Moreau
8714 R.W. Davidson, strain 731, USDA. 1942.
- 12864 R.N. Campbell, strain 36, Univ. of Minnesota. 1957.
- Ceratocystis ulmi (Buisman) Moreau
9350 R.W. Davidson, USDA. 1947.
- Ceratocystis variospora (Davidson) Moreau
12866 R.N. Campbell, strain I-4, Univ. of Minnesota. 1957.
- Cercospora angolensis Carvalho and Mendes
11669* T. Carvalho and O. Mendes, Rep. Técnica Agric., Angola. Bol. Soc. Bot. Portuguesa, 1953, 27, 201.
- Cercospora apii Fresenius
12246 R.S. Cox, Univ. of Florida. 1955.
- Cercospora beticola Saccardo
12824 and 12825 C. Chupp, Cornell Univ. 1957.

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- Cercospora canescens Ellis and Martin
11919 and 11920 E.S. Luttrell, strains 985-3 and 985-4, Georgia
Agric. Expt. Sta. 1954.
- Cercospora hayi Calpouzos
12234* Lucas Calpouzos, Mayaguez, Puerto Rico. 1955.
- Cercospora musae Zimmermann (= Mycosphaerella musicola Leach)
10688 CBS. 1949.
- 12565 Lucas Calpouzos, Mayaguez, Puerto Rico. 1956.
- Cercosporella herpotrichoides Fron
12083 R.A. Shoemaker, strain 38, Cornell Univ. 1955.
- Chaetomium aterrimum Ellis and Everhart
10025 P.B. Marsh, strain 1043.8, USDA. 1946. Mycologia, 1945,
37, 138.
- Chaetomium atrobrunneum Ames
11196* L.M. Ames, strain J-1041-(3-J3), ERDC. 1952. Mycologia,
1949, 41, 637.
- Chaetomium aureum Chivers
10050 P.B. Marsh, strain 1043.9, USDA. 1946.
- Chaetomium bostrychodes Zopf
10019 P.B. Marsh, strain 1045.1, USDA. 1946.
- Chaetomium cancroideum Tschudy
11197 L.M. Ames, strain 1044.4, ERDC. 1952.
- Chaetomium causiaeformis Ames
11198* L.M. Ames, strain J-1334, ERDC. 1952. Mycologia, 1949,
41, 637.
- Chaetomium cochlioides Palliser
10195 S.A. Waksman, strain 58, Rutgers Univ. 1946.
- Chaetomium contortum Peck
11199 L.M. Ames, ERDC. 1952.
- Chaetomium convolutum Chivers
11200 L.M. Ames, strain 1044.0, ERDC. 1952.
- Chaetomium cristatum Ames
11201* L.M. Ames, ERDC. 1952. Mycologia, 1949, 41, 637.
- Chaetomium cupreum Ames
11202* L.M. Ames, ERDC. 1952. Mycologia, 1949, 41, 637.
- Chaetomium dolichotrichum Ames
11203* L.M. Ames, strain 1044.7, ERDC. 1952. Mycologia, 1945,
37, 138.
- Chaetomium elatum Kunze and Schmidt ex Fries
10024 P.B. Marsh, strain 1043.4, USDA. 1946.
- Chaetomium erectum Skolko and Groves
11204 L.M. Ames, ERDC. 1952.
- Chaetomium fibripilium Ames
11205* L.M. Ames, ERDC. 1952.
- Chaetomium funicola Cooke
10006 P.B. Marsh, strain 1043.1, USDA.
- Chaetomium gangligerum Ames
11206* L.M. Ames, ERDC. 1952. Mycologia, 1949, 41, 637.
- Chaetomium globosum Kunze ex Fries
6205 C. Thom, strain 1042.4, USDA. 1937.

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- Chaetomium indicum Corda
 11207 L.M. Ames, ERDC. 1952.
- Chaetomium microcephalum Ames
 11208* L.M. Ames, strain 1045.0, ERDC. 1952. Mycologia, 1945,
 37, 138.
- Chaetomium mollipilium Ames
 11209* L.M. Ames, ERDC. 1952.
- Chaetomium murorum Corda
 11210 L.M. Ames, ERDC. 1952.
- Chaetomium nigricolor Ames
 11211* L.M. Ames, ERDC. 1952.
- Chaetomium ochraceum Tschudy
 11212 L.M. Ames, strain 1044.5, ERDC. 1952.
- Chaetomium pachypodioides Ames
 11213* L.M. Ames, strain 1044.3, ERDC. 1952. Mycologia, 1945,
 37, 138.
- Chaetomium reflexum Skolko and Groves
 11214 L.M. Ames, ERDC. 1952.
- Chaetomium spirale Zopf
 11215 L.M. Ames, ERDC. 1952.
- Chaetomium succineum Ames
 11216* L.M. Ames, ERDC. 1952. Mycologia, 1949, 41, 637.
- Chaetomium tetrasporum Hughes
 11421* CMI, strain 5639. 1953.
- Chaetomium turgidopilosum Ames
 11217* L.M. Ames, strain J-730, ERDC. 1952. Mycologia, 1949,
41, 637.
- Chaetomium velutinum Ames
 11218* L.M. Ames, strain J-359, ERDC. 1952. Mycologia, 1949,
41, 637.
- Chaetostylum fresenii van Tieghem and LeMonnier
 11881 CBS. 1954.
- Chalara mycoderma Bonorden
 11383 K. Sato, strain 4841, IFO. 1952.
- Chalara quercina: See Ceratocystis fagacearum
- Chalaropsis thielavioides Peyronel
 11234 Frances F. Lombard, strain E-1, USDA. 1952.
- Choanephora cucurbitarum (Berkeley and Ravenel) Thaxter
 10909 W.F. Jeffers, Univ. of Maryland. 1951. From squash
 blossom end rot.
- 12997 (+) and 12998 (-) NRRL, strains A-6097 and A-6098. 1957.
 Production of beta-carotene.
- Choanephora infundibulifera (Currey) Saccardo
 12305 (+) and 12306 (-) K. Sato, strains 5987 and 5988. IFO, 1955.
- Circinella linderi Hesseltein and Fennell
 11744* NRRL, strain 2342. 1954. Mycologia, 1955, 47, 205.
- Circinella minor Lendner
 9026 D.H. Linder, strain 107, Harvard Univ. 1943.
- Circinella mucoroides Saito
 11620 (C. chinensis) K. Sato, strain 4453, IFO. 1953.
- 11907 K. Sato, strain 4455, IFO. 1954.

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- Circinella muscae (Sorokine) Berlese and de Toni
 9023 (Circinella sydowi) D.H. Linder, strain 111, Harvard Univ.
 1943. *Mycologia*, 1955, 47, 201.
 9025 (Circinella spinosa) D.H. Linder, strain 109, Harvard Univ.
 1943.
 11549 (Circinella nigra) NRRL, strain X-45. 1953.
- Circinella umbellata van Tieghem and Le Monnier
 8774(+) V.M. Cutter, Jr., strain 99, Cornell Univ. 1942.
- Cladosporium avellaneum de Vries f. albidum de Vries
 11272* CBS. 1952. G.A. de Vries. Thesis, Univ. Utrecht. 1952.
- Cladosporium avellaneum de Vries f. avellaneum de Vries
 11273* CBS. 1952.
- Cladosporium avellaneum de Vries f. resinae (Lindau) de Vries
 11274* (C. avellaneum f. viride) CBS. 1952.
 11841 and 11873 (Helminthosporium resinae) D.H. Marsden, strains
 Christensen and Enola, Eastern States Farmers' Exchange,
 Mass. 1954. *Mycologia*, 1954, 46, 161.
- Cladosporium carpophilum Thuemen
 12062 L. Beraha, USDA. 1955. E.E. Wilson, Univ. of California.
 From almond.
- 12117 CBS, strain Jones. 1955. D.H. Palmiter, Univ. of Wisconsin.
 From peach.
- 11218 CBS, strain Heim. 1955. From peach.
- Cladosporium cladosporioides (Fresenius) de Vries
 11275 and 11276 CBS, strains Bennett and Hassall. 1952.
 11277 and 11278 CBS, strains Tengwall and Raistrick. 1952.
- Cladosporium cladosporioides (Fresenius) de Vries f. sp. pisicola
 (Snyder) de Vries
 11284* CBS, strain Californian. 1952. W.C. Snyder, Univ. of
 California. From pea.
- Cladosporium cucumerinum Ellis and Arthur
 11279 CBS, strain Delfgauw. 1952.
- Cladosporium elatum (Harz) Nannfeldt
 11280 CBS, strain Melin 389:14. 1952.
- Cladosporium fulvum Cooke
 10391 NRRL, strain 1671. 1948.
- Cladosporium herbarum Link ex Fries
 6506 J.A. Stevenson, USDA. 1938. CBS, strain 5362.
 11281, 11282 and 11283 CBS, strains Feekes 2 (apple), 3 (Typha),
 and 4 (Loos). 1952.
- Cladosporium macrocarpum Preuss
 11285, 11286 and 11287 CBS, strains 1 (Nicot-Toulouse 684), 2
 (Cantharellus), and 3 (Heald)—the latter an ascospore culture
 from Mycosphaerella tulasnei. 1952.
- Cladosporium mansoni Castellani
 762 A. Castellani, Ross Inst., London. 1954.
- Cladosporium sphaerospermum Penzig
 11288 and 11289 CBS, strains 1 (Tellier) and 2 (Zappéy). 1952.
 From human nails.
- 11290 to 11293 CBS, strains 3 (Engelhardt), 4 (Jochems), 5 (249-c)
 and 6 (Janke). 1952.

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- Cladosporium trichoides Emmons
 10958 C. W. Emmons, NIH. Amer. J. Clinical Path., 1952, 22,
 535.
- Cladosporium variabile (Cooke) de Vries
 11294 and 11295 CBS, strains 1 and 2. 1952. From spinach.
- Claviceps paspali Stevens and Hall
 9606 C. L. Lefebvre, USDA. 1944.
- Claviceps purpurea (Fries) Tulasne
 9605 C. L. Lefebvre, USDA. 1944.
- Clitocybe illudens Schweinitz
 11719 and 11720 J. W. Hastings, strains 10018 and 22424, North-
 western Univ. 1954.
- Clitocybe tabescens (Scopoli) Bresadola
 11780 Frances F. Lombard, USDA. 1954.
- Coccidioides immitis Rixford and Gilchrist
 7366 (*Glenospora metaeuropea*) A. Castellani, Inst. Med. Trop.,
 Lisbon. 1954.
 9180 and 9181 C. W. Emmons, strains M249 and 6210, NIH. 1943.
 10228 C. W. Emmons, strain 6206, NIH. 1947.
 11831 F. J. Herrero, Duke Univ. 1954.
- Cocomyces hiemalis Higgins
 12113 J. B. Routien, Chas. Pfizer and Co., Inc. Brooklyn, N.Y.
 1955. CBS.
- Cochliobolus miyabeanus (Ito and Kurabayashi) Drechsler
 11608 (*Ophiobolus miyabeanus*) K. Sato, strain 5277, IFO. 1953.
- Coemansia brasiliensis Thaxter ex Linder
 12438 NRRL, strain 1566. 1956.
- Coemansia erecta Bainier
 12439 NRRL, strain 2362. 1956.
- Coemansia guatemalensis Thaxter ex Linder
 12440 NRRL, strain 1565. 1956.
- Coemansia pectinata (Coemans) Bainier
 12441 NRRL, strain 1564. 1956.
- Colletotrichum destructivum O'Gara
 11869 Lois H. Tiffany, Iowa State College. 1954. From alfalfa.
- Colletotrichum gossypii Southworth
 12788 Katharina Bollenbacher, strain 612 Mn, Univ. of Arkansas,
 1957. From seedling blight of cotton.
- 12937 C. H. Arndt, strain 57-3, Clemson College, South Carolina.
 1957. Reisolation from experimentally infected cotton seed-
 ling.
- Colletotrichum graminicola (Cesati) Wilson
 11870 Lois H. Tiffany, Iowa State College. 1954. From alfalfa.
- Colletotrichum lagenarium (Passerini) Ellis and Halsted (= *Glomerella*
lagenaria Watanabe and Tamura)
 10917 W. F. Jeffers, Univ. of Maryland. 1951. From acorn squash.
 11326 J. G. Atkins, Louisiana State Univ. 1952. From cucumber.
- Colletotrichum lindemuthianum (Saccardo and Magnus) Scribner
 11224, 11225 and 11226 A. L. Andersen, strains alpha, beta and
 gamma, Michigan State Univ. 1952.

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Colletotrichum orchidearum Allescher

11937 W. F. Jeffers, Univ. of Maryland. 1954.

Colletotrichum phomoides (Saccardo) Chester (= Glomerella phomoides Swank)

12521 R. W. Thoma, strain S. C. 2145, Squibb Inst. Med. Res., New Brunswick, N.J. 1956.

12624 C. E. Cox, Univ. of Maryland. 1956.

Colletotrichum pisi Patouillard

12520 R. W. Thoma, Squibb Inst. Med. Res., New Brunswick, N.J. 1956.

Colletotrichum tabacum Böning

11995 A. Rothwell, Bot. and Plant Path. Branch, S. Rhodesia. 1955.

Colletotrichum trifolii Bain and Essary

9448 Helen Sherwin, strain 2941, USDA. 1948. From red clover.

12126 J. R. Leclercq, Coulommiers, France. 1955. From alfalfa.

Colletotrichum truncatum (Schweinitz) Andrus and Moore

11650 H. D. Wells, USDA, Tifton, Georgia. From Lotus.

Colletotrichum sp.

10921 W. F. Jeffers, Univ. of Maryland. From tobacco anthracnose.

Collybia velutipes (Curtis) Quélet

12053 W. F. Jeffers, Univ. of Maryland. 1955. Strain Pfizer 122.

Conidiobolus adiaeetus Drechsler

12589* C. Drechsler, USDA. 1956. J. Wash. Acad. Sci., 1953, 43, 42.

Conidiobolus chlamydosporus Drechsler

12242* C. Drechsler, USDA. 1955. Amer. J. Bot., 1955, 42, 799.

Conidiobolus denaeosporus Drechsler

12243* C. Drechsler, USDA. 1957. J. Wash. Acad. Sci., 1957, 47, 309.

Conidiobolus globuliferus Drechsler

12584* C. Drechsler, USDA. 1956. J. Wash. Acad. Sci., 1956, 43, 783.

Conidiobolus heterosporus Drechsler

12941* C. Drechsler, USDA. 1957. Amer. J. Bot., 1953, 40, 107.

Conidiobolus lamprauges Drechsler

12592* C. Drechsler, USDA. 1956. J. Wash. Acad. Sci., 1953, 43, 35.

Conidiobolus megalotocus Drechsler

12914* C. Drechsler, USDA. 1957. Amer. J. Bot., 1956, 43, 778.

Conidiobolus nanodes Drechsler

12585* C. Drechsler, USDA. 1956. Amer. J. Bot., 1955, 42, 439.

Conidiobolus osmodes Drechsler

12590* C. Drechsler, USDA. 1956. Amer. J. Bot., 1954, 41, 571.

Conidiobolus paulus Drechsler

12942* C. Drechsler, USDA. 1957. Bull. Torrey Bot. Club, 1957, 84, 275.

Conidiobolus polytocus Drechsler

12244* C. Drechsler, USDA. 1955. Amer. J. Bot., 1955, 42, 793.

Conidiobolus pumilus Drechsler

12791* C. Drechsler, USDA. 1956. J. Wash. Acad. Sci., 1955, 45, 114.

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- Conidiobolus rhyosporus Drechsler
 1255 C. Drechsler, USDA. 1956. Amer. J. Bot., 1954, 41, 567.
- Conidiobolus rugosus Drechsler
 12586* C. Drechsler, USDA. 1956. Amer. J. Bot., 1955, 42, 437.
- Conidiobolus thromboides Drechsler
 12587* C. Drechsler, USDA. 1956. J. Wash. Acad. Sci., 1953, 43, 38.
- Conidiobolus undulatus Drechsler
 12943* C. Drechsler, USDA. 1957. Bull. Torrey Bot. Club, 1957, 84, 275.
- Conidiobolus villosus: See Delacroixia coronata
- Coniella diplodiella (Spegazzini) Petrak and Sydow
 12684 (Coniothyrium diplodiella) CBS. 1956.
- Coniophora puteana (Fries) Karsten
 9351 (Coniophora cerebella) R.W. Davidson, strain F.P. 94042-R, USDA. 1947.
- 12675 Frances F. Lombard, USDA. 1956. Strain Madison 515.
- Coniothyrium fuckelii Saccardo
 11349 CBS. 1952.
- Coniothyrium hellebori Cooke and Massee
 12522 R.W. Thoma, Squibb Inst. Med. Res., New Brunswick, N.J. 1956.
- Coprinus comatus Fries
 12640 Frances F. Lombard, strain 94373-Sp, USDA. 1956.
- Corticium catonii Burgeff
 11844 CBS. 1954.
- Corticium centrifugum (Léveillé) Bresadola
 11098 K. Sato, strain 4476, IFO. 1954.
- Corticium conigenum
 11931 W.F. Jeffers, Univ. of Maryland. 1954. Chas. Pfizer Co., strain 6621.
- Coryneum carpophilum (Léveillé) Jauch
 12683 (Clasterosporium carpophilum) CBS. 1956.
- Creonectria rubicarpa (Cooke) Seaver
 9551 E.S. Luttrell, strain 52, Georgia Agric. Expt. Sta. 1944.
- Cryptococcus albidus (Saito) Skinner
 10666 NRRL, strain Y-1400. 1956. CBS.
- Cryptococcus diffluens (Zach) Lodder and Kreger-van Rij
 10672 (Torulopsis rotundata) NRRL, strain Y-1402. 1948. CBS.
 12307 K. Sato, strain 0612, IFO. 1955.
- Cryptococcus laurentii (Kufferath) Skinner
 9981 NRRL, strain Y-199. 1946.
 10566 NRRL, strain Y-1510. 1952. CBS.
 10654 NRRL, strain Y-1582. 1956.
- Cryptococcus laurentii var. flavescens (Saito) Lodder and Kreger-van Rij
 10668 NRRL, strain Y-1401. 1956. CBS.
 11486* NRRL, strain Y-1404. 1953. CBS.
- Cryptococcus luteolus (Saito) Skinner
 10671 NRRL, strain Y-986. 1956. E.M. Mrak strain 32.
- Cryptococcus neoformans (Sanfelice) Vuillemin
 2505 F.W. Tanner, Univ. of Illinois. 1929. NCTC strain 885.

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Cryptococcus neoformans (Continued)

- 2526 F.W. Tanner, Univ. of Illinois. 1922. NCTC strain 1492.
4189 (*Cryptococcus hominis*) CBS. 1927.
4413 and 4414 E.F. Hirsch, strains 2016 and 2943, St. Luke's Hospital, Chicago. 1927.
9506 O. Felsenfeld, Chicago Med. School. 1944.
10226 C.W. Emmons, strain 3713, NIH. 1947. From clinical meningitis.
11239 and 11240 C.W. Emmons, strains 3717 and 3718, NIH. 1952. From soil.
11241 and 11242 C.W. Emmons, strains 3723 and 3724, NIH. 1952. From bovine mastitis.

Cryptococcus terreus di Menna

- 11799* Margaret E. di Menna, Univ. of Otago, New Zealand. From soil. J. Gen. Microbiol., 1954, 11, 195.

Cryptospora umbrina (Jenkins) Wehmyer

- 11271 CBS. 1952. Anna E. Jenkins, Cornell Univ. From brown canker on rose.

Cunninghamella bainieri Naumov

- 6794b (-) and 6796b (-) A.F. Blakeslee, CIW. 1938.
8987 and 9244 V.M. Cutter, Jr., strains 152 and 29, Cornell Univ. 1942.

Cunninghamella bertholletiae Stadel

- 11064 (+) NRRL, strain 1378. 1951.

Cunninghamella blakesleeana Lendner

- 8688a (+) and 8688b (-) NRRL, strains 1369 and 1368. 1942. Strain "a" is identical with H-334 Upjohn, used in oxidation of steroids. Appl. Microbiol., 1955, 3, 14.

Cunninghamella echinulata (Matruchot) Thaxter

- 8984 and 9243 V.M. Cutter, Jr., strains 224 and 345, Cornell Univ. 1942.

- 11585 (-) NRRL, strain 1387. 1953. A.F. Blakeslee strain C 886.

Cunninghamella elegans Lendner

- 6795b (-) A.F. Blakeslee, CIW. 1938.

- 7929, 9245 and 9246 V.M. Cutter, Jr., strains 29, 296 and 349, Cornell Univ. 1943.

- 10028a (+) and 10028b (-) NRRL, strains 1392 and 1393. 1946. A.F. Blakeslee.

- 11064 (+) (*Cunninghamella bertholletiae*) NRRL, strain 1378. 1951.

Cunninghamella verticillata Paine

- 8983, 8985 and 8986 V.M. Cutter, strains 225, 223 and 209, Cornell Univ. 1942.

Curvularia brachyspora Boedijn

- 12330 QMRDC, strain 93b. 1955.

Curvularia geniculata (Tracy and Earle) Boedijn

- 6671 J.E. Machacek, Canada Dept. Agric., Winnipeg. 1938. CBS.

- 11153 CBS, strain B-R. 1951.

Curvularia inaequalis (Shear) Boedijn

- 6478 J.A. Stevenson, strain 1314, USDA. 1938. C.L. Shear strain 51.

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- Curvularia intermedia Boedijn
 12231 QMRDC, strain 563. 1955.
- Curvularia lunata (Wakker) Boedijn
 12017 NRRL, strain 2380. 1955. Chas. Pfizer Co. strain used in steroid research.
- Curvularia maculans (Bancroft) Boedijn
 12342 QMRDC, strain 666, 1955.
- Curvularia pallescens Boedijn
 12018 NRRL, strain 2381. 1955. Chas. Pfizer Co. strain used in steroid research.
- Curvularia spicifera (Bainier) Boedijn
 12415 (*Helminthosporium spiciferum*) CMI, strain 61533. 1955. CBS.
- Curvularia trifolii (Kauffman) Boedijn f. sp. gladioli Parmelee and Luttrell
 11075 B.H. Marshall, Jr., strain 246, USDA. 1951. From gladiolus.
- Cylindrocarpon ianthothele Wollenweber (= *Nectria rubi* Osterwalder)
 12821 R.W. Thoma, strain S.C. 2797, Squibb Inst. Med. Res., New Brunswick, N.J. 1957.
- Cylindrocarpon olidum Wollenweber
 6679 J.E. Machacek, Canada Dept. Agric., Winnipeg. 1938.
- Cylindrocarpon radicicola Wollenweber
 11011 D. Perlman, strain SS 207-1, Squibb Inst. Med. Res., New Brunswick, N.J. 1951. Production of Δ -testolactone from progesterone. U.S. Patent 2,744,120.
- 11830 W.H. Wheeler, USDA. 1954. From gloxinia corms.
- Cylindrocladium scoparium Morgan
 11614 R.S. Cox, Univ. of Delaware. 1953. From crown canker on multiflora roses.
- Dactylium sp.
 11339 W.F. Jeffers, Univ. of Maryland. 1952. T.T. Ayers, strain 150.
- Daedalea confragosa Bolton ex Fries
 9402 J.W. Sinden, strain Overholts 24697-R, Pennsylvania State Coll. 1947.
- Daedalea quercina Linnaeus ex Fries
 9404 J.W. Sinden, strain Overholts 24780-S, Pennsylvania State Coll. 1947.
- Daedalea unicolor Fries
 9405 J.W. Sinden, strain Overholts 24781-R, Pennsylvania State Coll. 1947.
- Daedalea juniperina Murrill
 12420 Frances F. Lombard, strain 71540-R, USDA. 1956.
- Darluca filum (Bivona-Bernardi) Castagne
 11100 CBS. 1951.
- Debaryomyces dispertis, D. globosus; See *Saccharomyces bispinosus*
- Debaryomyces hansenii (Zopf) Lodder and Kreger-van Rij
 2357 (*Saccharomyces hansenii*) F.W. Tanner, Univ. of Illinois. NCTC strain 1681.

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Debaryomyces hansenii (Continued)

- 9367 R. Ciferri, Univ. of Pavia, Italy. 1947. From tobacco fermentation.
 10619 NRRL, strain Y-1448. 1949.
 10622 (Debaryomyces membranaefaciens) NRRL, strain Y-1455. 1949. CBS.
 10623 (Debaryomyces tyrocola) NRRL, strain Y-1458. 1953. CBS.
 10996, 10997 and 10998 (Debaryomyces tyrocola) K. Kominami, strains 7061, 7062 and 7063, Nagao Inst., Japan. 1951.

Debaryomyces kloeckeri Guilliermond and Péju

- 4143 (Debaryomyces fabryi) F.W. Weidman, Univ. of Pennsylvania. 1927.
 4144 (Debaryomyces gruetzii) F.W. Weidman, Univ. of Pennsylvania. 1927.
 10620 NRRL, strain Y-1449. 1949. CBS.
 10994 and 10995 (Debaryomyces sake) K. Kominami, strains 7059 and 7060, Nagao Inst., Japan. 1951.

Debaryomyces mandshuricus: See Saccharomyces cerevisiae

Debaryomyces marama di Menna

- 11627* Margaret E. di Menna, Univ. of Otago, New Zealand. 1953. J. Gen. Microbiol., 1954, 10, 65.

Debaryomyces nicotianae Giovannozzi

- 9364 R. Ciferri, Univ. of Pavia, Italy. 1947. From tobacco fermentation.
 9365 R. Ciferri, Univ. of Pavia. 1947. Received as var. minor.
 9366 (Debaryomyces marylandii) R. Ciferri, Univ. of Pavia. 1947.
Delacroixia coronata (Costantin) Saccardo and Sydow

- 10051 (Entomophthora coronata) Flora G. Pollack, USDA. 1946.
 10941 (Conidiobolus villosus) W.F. Jeffers, Univ. of Maryland. 1951.

Diaporthe oncostoma (Duby) Fuckel

- 11324 Frances F. Lombard, strain 71617, USDA. 1952. From Robinia canker.

Diaporthe phaseolorum (Cooke and Ellis) Saccardo var. caulivora Athow and Caldwell

- 12047 and 12048 A.A. Hildebrand, Canada Dept. Agric., Harrow, Ontario. 1954. From soybean, isolates A (monoconidial) and B (ascigerous). Plant Dis. Reporter, 1954, 38, 640.

Diaporthe phaseolorum var. sojae (Lehman) Wehmyer

- 12049 and 12050 A.A. Hildebrand, isolates C and D, Canada Dept. Agric. 1954.

Dibotryon morbosum (Schweinitz) Theissen and Sydow

- 11350 CBS. 1952.

Dictyostelium discoideum Raper

- 11755 K.B. Raper, Univ. of Wisconsin. 1954. With Escherichia coli.

Dictyostelium polycephalum Raper

- 12548* K.B. Raper, Univ. of Wisconsin. 1956. J. Gen. Microb. 1956, 14, 716. With Aerobacter aerogenes and Dematium nigrum

Dictyostelium purpureum Olive

- 12295 K.B. Raper, strain 3645, Univ. of Wisconsin. 1955.

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- Didymella lycopersici Klebahn
 11847 CBS, strain Wollenweber. 1954.
- Diplocarpon rosae Wolf
 11373 W.F. Jeffers, strain 4-5, Univ. of Maryland. 1952.
- Diplodia cajani Raychauduri
 11848* CBS. 1954. Raychauduri strain GC 275.
- Diplodia natalensis Evans (- Physalospora rhodina [Berkeley and Curtis]
 Cooke)
 9055 E. West, Univ. of Florida. 1943.
- Diplodia zeae (Schweinitz) Léveillé
 10235 A.J. Ullstrup, USDA, Lafayette, Indiana. 1947.
- Diplodina persicae Horn and Hawthorne
 11893 M.A. Smith, USDA, Chicago. 1954. Phytopath., 1954, 44, 134.
- Diopodascus uninucleatus Biggs
 7445* E.M. Mrak, Univ. of California, Berkeley. 1939.
- Eidamia catenulata Horne and Williamson
 6475 J.A. Stevenson, USDA. 1938. A.S. Horne strain 1137.
- Eidamia viridescens Horne and Williamson
 6482 J.A. Stevenson, USDA. 1938. A.S. Horne strain 1358.
- Elsinoë corni Jenkins and Bitancourt
 11189 Anna E. Jenkins, strain 705, USDA. 1951. J. Wash. Acad. Sci., 1948, 38, 362.
- 11319 Anna E. Jenkins, strain 708X, USDA. 1952.
- Elsinoë diospyri Bitancourt and Jenkins
 11184 Anna E. Jenkins, strain 630-E, USDA. Arq. Inst. Biol. São Paulo, 1950, 20, 7.
- Elsinoë fawcetti Jenkins
 11512 G.F. Weber, Univ. of Florida. 1953.
- 11526 A.G. Plakidas, Louisiana State Univ. 1953.
- Elsinoë heveae Bitancourt and Jenkins
 12570* and 12571 Anna E. Jenkins, strains 942 F and 944 F, Univ. of São Paulo, Brazil. 1956.
- Emericellopsis salmosynnemata Grosklags and Swift
 11661 (Cephalosporium salmosynematum) J.M. Roberts, strain 3590 A, Michigan State Dept. Health. 1953. Produces synnematin. U.S. Patent 2,638,018.
- Endoconidiophora: See Ceratocystis
- Endomyces decipiens (Tulasne) Reess
 10626 NRRL, strain Y-1480. 1949. CBS.
- 10758 NRRL, strain Y-1878. 1950.
- Endomyces lactis: See Geotrichum candidum
- Endomyces magnusii Ludwig
 2105 R. Chodat, Univ. of Geneva, Switzerland. 1928. NRRL strain Y-836.
- Endomycopsis bisporus (Beck) Dekker
 10627* NRRL, strain Y-1482. 1949. CBS.
- Endomycopsis capsularis (Schiönnung) Dekker
 2471 NRRL, strain Y-50. 1946.

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- Endomycopsis chodati Wickerham and Burton
 6270 (*Sporotrichum anglicum*) A. Castellani, Ross Inst., London.
 1937.
- Endomycopsis fibuliger (Lindner) Dekker
 2080 (*Endomyces lindneri*) F. W. Tanner, Univ. of Illinois. 1928.
 CBS. NRRL strain Y-3
- 2082 F. W. Tanner. 1925. NRRL strain Y-25.
- 2088 (*Endomyces hordei*) R. Chodat, strain 116, Univ. of Geneva,
 Switzerland. 1928. NRRL strain Y-76.
- 2089 (*Endomyces lindneri*) R. Chodat, strain 117. 1928. NRRL
 strain Y-77.
- 2090 R. Chodat, strain 118. 1928. NRRL strain Y-78.
- 9947 NRRL, strain Y-1062. 1946. Production of amylase.
- Endomycopsis javanensis (Klöcker) Dekker
 10628 NRRL, strain Y-1483. 1943. CBS.
- Endomycopsis selenospora (Nadson and Krassilnikov) Dekker
 10629 NRRL, strain Y-1357. 1949. CBS.
- Endomycopsis vernalis: See *Trichosporon pullulans*
- Endothia parasitica (Murrill) P.J. and H.W. Anderson
 9414 J. W. Sinden, strain Overholts 24786-R, Pennsylvania State
 Coll. 1947.
- Entomophthora coronata: See *Delacroixia coronata*
- Epicoccum purpurascens Ehrenberg ex Wallroth
 10999 K. Kominami, strain 4160, Nagao Inst., Japan. 1951.
- Epidermophyton floccosum (Harz) Langeron and Milochevitch
 9646 C. W. Emmons, strain 1282, NIH. 1944.
- 10227 C. W. Emmons, strain 1209, NIH. 1947.
- Eremascus albus Eidam
 11664 and 11665 E.K. Goldie-Smith, strains 702 and 704, Univ. of
 North Carolina. 1953. W.J. Dowson.
- Eremothecium ashbyii Guilliermond³
 6747 CBS. 1945.
- Fabraea maculata Atkinson
 11941 (*Entomosporium maculatum*) W.F. Jeffers, Univ. of
 Maryland. 1954.
- Fomes annosus (Fries) Cooke
 9582 R.W. Davidson, strain 56499-S, USDA. 1945.
- 11667 Frances F. Lombard, strain 58548-S, USDA. 1953.
- Fomes applanatus (Fries) Gillet
 9400 J. W. Sinden, strain Overholts 24772-S, Pennsylvania State
 Coll. 1947.
- Fomes pini (Fries) Karsten
 12240 Frances F. Lombard, strain Bud. 1428-B, USDA. 1955.
- Fomes pinicola (Fries) Cooke
 9399 J. W. Sinden, strain Overholts 24719-S, Pennsylvania State
 Coll. 1947.

³ Approval of the U.S. Dept. of Agriculture is prerequisite to sending
 this culture to certain states.

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- Fomes robustus Karsten
 9401 J. W. Sinden, strain Overholts 24691-S, Pennsylvania State Coll. 1947.
- Fomes roseus (Albertini and Schweinitz) Cooke
 11749 Frances F. Lombard, strain 17572, USDA. 1954. Canada Dept. Agric., Forest Path. Sect. Ottawa.
- Fomes subroseus (Weir) Overholts
 11750 Frances F. Lombard, strain 17529, USDA. 1954. Canada Dept. Agric.
- Fusarium avenaceum (Fries) Saccardo
 8150 and 8151 W. J. Robbins, strains M and N, New York Bot. Garden. 1941.
- Fusarium bulbigenum: See under F. oxysporum
- Fusarium caeruleum (Libert) Saccardo
 11849 CBS, strain Wollenweber. 1954.
- Fusarium conglutinans: See F. oxysporum f. conglutinans
- Fusarium culmorum (W. G. Smith) Saccardo
 12656 CMI, strain 35099. 1956. From soil, England.
- Fusarium decemcellulare: See Calonectria rigidiuscula
- Fusarium dimerum Penzig
 11552 A. Niethammer, strain F 24, Stuttgart, Germany. 1953.
- Fusarium javanicum var. radicicola: See Hypomyces ipomoea
- Fusarium lateritium: See Gibberella baccata
- Fusarium lini: See F. oxysporum f. lini
- Fusarium lycopersici: See F. oxysporum f. lycopersici
- Fusarium moniliforme: See Gibberella fujikuroi
- Fusarium nivale: See Calonectria nivalis
- Fusarium orthoceras: See under F. oxysporum
- Fusarium niveum: See F. oxysporum f. niveum
- Fusarium oxysporum Schlectendahl emend. Snyder and Hansen
 659 F. D. Weidman, strain DR 1004, Univ. of Pennsylvania. 1926.
 R. J. Sabouraud.
- 4254 C. L. Kerrenberg, strain Berl, Hamburg, Germany. 1927.
- 7601 F. A. Weiss, strain 529, USDA. 1939. From potato wilt.
- 12581 F. A. Weiss, ATCC. 1956. From roots of turf grass.
- Fusarium oxysporum f. batatas (Wollenweber) Snyder and Hansen
 10911 W. F. Jeffers, Univ. of Maryland. 1951. From sweet potato wilt.
- 11938 W. F. Jeffers. 1954. From sweet potato wilt.
- Fusarium oxysporum f. bulbigenum (Cooke and Misse) Snyder and Hansen
 7618 F. A. Weiss, strain 693, USDA. H. W. Wollenweber.
- Fusarium oxysporum f. cepae (Hansawa) Snyder and Hansen
 11711 (Fusarium zonatum) W. C. Snyder, strain 021, Univ. of California. 1953. From onion bulb rot.
- 11850 (F. oxysporum f. 7) CBS. 1954. L. H. Leonian. From onion.
- Fusarium oxysporum f. conglutinans (Wollenweber) Snyder and Hansen
 9990 G. W. Irving, Jr., USDA. 1946. From cabbage wilt.
- Fusarium oxysporum f. cubense (E. F. Smith) Snyder and Hansen
 11356 CBS. 1952. From banana wilt.

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- Fusarium oxysporum f. dianthi (Prillieux and Delacroix) Snyder and Hansen
- 11162 W.F. Jeffers, Univ. of Maryland. 1952. From carnation wilt.
- 11939 W.F. Jeffers. 1954. H.N. Hansen.
- Fusarium oxysporum f. gladioli (Massey) Snyder and Hansen
- 11137 W.F. Jeffers, Univ. of Maryland. 1952. B.H. Marshall, USDA. From gladiolus corm rot.
- 11851 CBS. 1954. L.M. Massey
- Fusarium oxysporum f. lini (Bolley) Snyder and Hansen
- 10959 and 10960 J.J. Christensen, strains 0 and 1, Univ. of Minnesota. 1951. From flax wilt.
- Fusarium oxysporum f. lycopersici (Brushi) Snyder and Hansen.
- 9849 G.W. Irving, Jr., strain Wellman R-5-6Q, USDA. 1944. From tomato wilt.
- Fusarium oxysporum f. melonis (Leach and Currence) Snyder and Hansen
- 12886 and 12887 J.H. Owen, strains California and Cornell, Univ. of Florida. 1957. From cantaloupe wilt.
- Fusarium oxysporum f. nicotianae (Johnson) Snyder and Hansen
- 10913 W.F. Jeffers, Univ. of Maryland. 1951. From tobacco wilt.
- Fusarium oxysporum f. niveum (E.F. Smith) Snyder and Hansen
- 12848 Nash Winstead, North Carolina State College, Raleigh. 1957. From watermelon wilt.
- Fusarium oxysporum f. perniciosum (Hepting) Snyder and Hansen
- 12282 W.F. Jeffers, Univ. of Maryland. 1955. From mimosa (*Albizzia*) wilt.
- Fusarium oxysporum f. pisi (Lindford) Snyder and Hansen
- 9991 G.W. Irving, Jr., USDA. 1946. From pea wilt.
- Fusarium oxysporum f. vasinfectum (Atkinson) Snyder and Hansen
- 7808 C.D. Sherbakoff, strain CR9, Univ. of Tennessee. 1940. From cotton wilt.
- Fusarium poae (Peck) Wollenweber
- 10961 (*Sporotrichum poae*) W.F. Jeffers, Univ. of Maryland. 1951.
- 11768 (*F. sporotrichoides*) QMRDC, strain 753. 1954. G.F. Weber.
- Fusarium radicicola Wollenweber: See *Hypomyces ipomoea*
- Fusarium roseum Link
- 10914 W.F. Jeffers, Univ. of Maryland. 1951.
- 12822 R.W. Thoma, strain SC 2345, Squibb Inst. Med. Res., New Brunswick, N.J. 1957.
- Fusarium sambucinum Fuckel f. 6 Wollenweber
- 11852 CBS, Wollenweber strain 5406. 1954.
- Fusarium scirpi Lambotte and Fautrey
- 11853 CBS, strain Wollenweber. 1954.
- Fusarium solani (Martius) Appel and Wollenweber (= *Nectria haemato-cocca* Berkeley and Broome)
- 11712 W.C. Snyder, strain SC 16, Univ. of California, Berkeley. 1953. From squash. Received as *Hypomyces solani*.
- 12823 R.W. Thoma, strain SC 2609, Squibb Inst. Med. Res., New Brunswick, N.J. 1957.
- Fusarium solani f. pisi (Jones) Snyder and Hansen
- 10915 W.F. Jeffers, Univ. of Maryland. 1951.

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Fusarium sporotrichoides Sherbakoff: See Fusarium poae

Fusicladium effusum Winter

11320 J.R. Cole, USDA. Albany, Georgia. 1952.

12735 and 12736 R.H. Converse, strains W-11 and M-1, Oklahoma
A. and M. Coll., Stillwater. Monosporous isolates.

Gelasinospora calospora (Mouton) Moreau

12558 C.J. Alexopoulos, strain B₂, Michigan State Univ. 1956.
Homothallic.

Gelasinospora calospora var. autosterra Alexopoulos and Sung

10964 and 10965 C.J. Alexopoulos, Sex A and Sex B. Heterothallic
strains from leaves of Tillandsia.

Gelasinospora cerealis Dowding

6684 J.E. Machacek, Canada Dept. Agric., Winnipeg. 1938.

11344 E.S. Dowding, Univ. of Alberta, Canada. 1952. From roots
of cereals.

Gelasinospora tetrasperma Dowding

11345 E.S. Dowding. 1952. From parsnip seed.

Geomycetes vulgaris Traaen

6685 J.E. Machacek, Canada Dept. Agric., Winnipeg. 1938.

Geotrichum candidum Link ex Fries

755 (Oidium asteroides) A. Castellani, Tulane Univ. 1926.

4139 (Oidium matalense) A. Castellani, Tulane Univ. 1927. Cf.
J.W. Carmichael, Mycologia, 1957, 49, 820.

4798 (Oospora lactis) F.W. Tanner, Univ. of Illinois. 1926.

7471 (Geotrichum versiforme) C.W. Emmons, strain 3905, NIH.
1950.

10834 CBS. 1951.

11115 NRRL, strain 1365. 1952. Fat synthesizing strain from
Germany.

12784 (Oospora camemberti) CBS. 1957.

Geotrichum candidum var. citri-aurantii (Ferraris) Cifferi

7019 (Oospora citri-aurantii) H.S. Fawcett, strain SA 122, Univ.
of California, Riverside. 1938. From lemon, Argentina.

Gibberella baccata (Wallroth) Saccardo

11857 (Fusarium lateritium) CBS. 1954.

Gibberella fujikuroi (Sawada) Wollenweber

10052 (Fusarium moniliforme) P.B. Marsh, strain 1004.1, USDA.
1946. QMRDC strain 1224. Military specifications for
fungus resistance tests.

10704 J.A. Stevenson, USDA. 1949. E.C. Tullis, from stalk rot
of sorghum.

11573 K. Sato, strain 4473, IFO. 1953.

12616, 12617 and 12618 CMI, strains 58290, 58293 and 58294. 1956.
P.W. Brian, Butterwick Research Lab., England, strains
917, 1135 and 1139. Production of gibberellic acid.

12763 W.L. Gordon, strain 4150, Univ. of Manitoba. 1957.

12776 W.L. Gordon, strain T2a. 1957. Perithecial strain from
Hibiscus, Trinidad.

12777 W.L. Gordon, strain 3890. Southern Rhodesia.

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Gibberella fujikuroi (Continued)

- 12778 W.L. Gordon, strain 3902. India.
 12780 W.L. Gordon, strain 4119. Sierra Leone.
 12781 W.L. Gordon, strain 4157. Uruguay
 12782 W.L. Gordon, strain 4169. Pakistan.

Gibberella fujikuroi var. anthophilum (A. Braun) Wollenweber

- 12765 W.L. Gordon, strain 3080. 1957.

Gibberella fujikuroi var. subglutinans (Wollenweber and Reinking)

Edwards

- 11357 CBS. 1952.
 12764 W.L. Gordon, strain 3687, Univ. of Manitoba. 1957.

Gibberella zeae (Schweinitz) Petch

- 10910 W.F. Jeffers, Univ. of Maryland. 1951.

Gliocladium aureum Rader

- 10406* W.E. Rader, Shell Oil Co., Modesto, Calif. 1948.

Gliocladium catenulatum Gilman and Abbott

- 10523 NRRL, strain 1091. 1948.

Gliocladium deliquescens Sopp

- 10097 C. Thom, strain 457, USDA. 1946. NRRL strain 1086.

Gliocladium fimbriatum: See Myrothecium verrucaria and Trichoderma

Gliocladium roseum (Link ex Fries?) Bainier: See also Nectria gliocladiooides

- 8684 NRRL, strain 1859. 1942.

- 10521 NRRL, strain 1085. 1948.

- 12259 (Clonostachys araucaria var. rosea) L.W. Durrell, Colorado
 A. and M. Coll. 1955.

Gliocladium vermoesenii (Biourge) Thom

- 10522 NRRL, strain 1752. H.S. Fawcett, Univ. of California.
 From lemon, Spain.

Gliocladium sp.

- 11081 P.W. Brian, strain 650, Butterwick Research Lab., England.
 1951. Production of antibiotics. Experientia, 1951, 7, 266.

Gliomastix convoluta (Harz) Mason

- 9914 NCTC, strain 1134. 1945.

Gloeosporium album Osterwalder

- 11789 F.Beran, Bundesanst.f. Pflanzenschutz, Vienna. 1954.

Glomerella cingulata (Stoneman) Spaulding and Schrenk

- 6509 J.A. Stevenson, strain 5365, USDA. 1938. From rhododendron.

- 10529 C.L. Markert, strain W 76, Johns Hopkins Univ. 1948.

- 10534 C.L. Markert, strain B (minus). 1948.

- 12097 F.A. Weiss, ATCC. 1955. From azalea twig blight.

Glomerella fusariooides Edgerton

- 9552 E.S. Luttrell, strain 57, Georgia Agric. Expt. Sta. 1944.
 From stems of Asclepias.

Glomerella glycines (Hori) Lehman and Wolf

- 11871 Lois H. Tiffany, Iowa State Coll. 1954. From alfalfa stems.

- 11872 Lois H. Tiffany. 1954. From soybean stems.

Glomerella gossypii: See Colletotrichum gossypii

Gnomonia fragariae Klebahn

- 11430 CBS, strain Groves. 1953.

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- Gnomia ulmea Fries
 11431 CBS. 1953.
- Graphium rubrum Rumbold
 6505 J.A. Stevenson, strain 5357, USDA. 1938. From blue-stained wood.
- Guignardia bidwellii (Ellis) Viala and Ravaz f. euvitis Luttrell
 9559, 9560 and 9561 E.S. Luttrell, strains 120, 123 and 128, Georgia Agric. Expt. Sta. 1944. From American bunch and vinifera grapes.
- Guignardia bidwellii f. muscadinii Luttrell
 9562 E.S. Luttrell, strain 133. 1944. From muscadine grape.
- Guignardia vaccinii Shear
 6483 J.A. Stevenson, strain 1385, USDA. 1938.
- Hanseniaspora valbyensis Klöcker
 10630 (H. guilliermondii) NRRL, strain Y-1625. 1949. CBS.
 10631* NRRL, strain Y-1626. 1949. CBS.
- Hansenula amomala (Hansen) Sydow
 580 F.W. Tanner, strain 2577, Univ. of Illinois. 1925. NRRL strain Y-11.
 2581 R. Chodat, strain 112, Univ. of Geneva, Switzerland. 1928. NRRL strain Y-52.
 4103 F.A. McDermott, Eastern Alcohol Corp. 1927. AMNH strain 660.
 8167 and 8168 NRRL, strains Y-365 (rough) and Y-366 (smooth). 1941.
 8170 NRRL, strain Y-656. 1941. Seagram and Sons, Inc., strain 20.
 8202 E.M. Mrak, strain Pq, Univ. of California, Berkeley. 1941.
 9722 (Hansenula lambica) P.R. Burkholder, strain 146, Yale Univ. 1945.
- Hansenula californica (Lodder) Wickerham
 10680 NRRL, strain Y-1425. 1949.
- Hansenula mrakii Wickerham
 10743* O.B. Williams, Univ. of Texas. 1949. NRRL strain Y-1364. USDA Tech. Bull. 1029. 1951.
- Hansenula saturnus (Klöcker) H. and P. Sydow
 2579 F.W. Tanner, Univ. of Illinois. 1923. NRRL strain Y-12.
 2582 R. Chodat, strain 105, Univ. of Geneva, Switzerland. 1928. NRRL strain Y-1.
- Hansenula suaveolens (Klöcker) Dekker
 9547 NRRL, strain Y-538. 1945. Selective assimilation of d-xylose. Ind. and Eng. Chem., 1945, 17, 182.
- Haplosporangium parvum Emmons and Ashburn
 10784 and 10785 J.W. Carmichael, strains 10 and 190, Univ. of Alberta, Canada. From pulmonary lesions in rodents. U.S. Pub. Health Repts., 1942, 57, 1757.
- Haplosporangium sp.
 10903 W.L. Jellison, Rocky Mountain Lab., U.S.P.H. Service. From pulmonary lesions in cony. U.S. Pub. Health Repts., 1951, 65, 1057.

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- Helicobasidium mompa Tanaka
11046 J.A. Stevenson, USDA. 1951. K. Ito, Bull. Govt. Formosa Expt. Sta. 43. 1949.
- Helicobasidium purpureum Patouillard
11070 (Rhizoctonia croccorum) CBS. 1951.
- Helicosporium linderi Moore
11826* G.W. Martin, strain 8737, Univ. of Iowa. 1954. Mycologia, 1954, 46, 90.
- Helicostylum elegans Corda
12745 J.N. Lythgoe, Trinity Coll., Cambridge, England. 1957.
- Helicostylum piriforme Bainier
8686 NRRL, strain 1399. 1942.
- 8992 V.M. Cutter, Jr., strain 132, Cornell Univ. 1942.
- Helminthosporium avenae Eidam (= Pyrenophora avenae Ito and Kuribayashi)
11264 R.W. Earhart, strain LS-1, Univ. of Florida. 1952.
11322 B.A. Oteifa, ATCC. 1952. From oat seedling blight.
- Helminthosporium carbonum Ullstrup
11533 Alice L. Robert, strain 53-C-1a (Race 1), USDA. 1953.
- Helminthosporium catenarium Drechsler
6689 J.E. Machacek, Canada Dept. Agric., Winnipeg. 1938. CBS.
- Helminthosporium gramineum Rabenhorst (= Pyrenophora graminea Ito and Kuribayashi)
6695 J.E. Machacek, Canada Dept. Agric., Winnipeg. 1938.
11254 J.J. Christensen, strain 51, Univ. of Minnesota. 1952.
- Helminthosporium leptochloae Nisikado and Miyake
6700 J.E. Machacek, Canada Dept. Agric., Winnipeg. 1938.
- Helminthosporium maydis Nisikado and Miyake (= Cochliobolus heterostrophus Drechsler)
11534 Alice L. Robert, strain 53-h-2a, USDA. 1953.
- Helminthosporium nodulosum (Berkeley and Curtis) Saccardo (= Cochliobolus nodulosus Luttrell)
6704 J.E. Machacek, Canada Dept. Agric., Winnipeg. 1938. CBS.
- Helminthosporium oryzae Breda de Haan (= Cochliobolus miyabeanus Ito and Kuribayashi)
11000 K. Kominami, strain 4153, Nagao Inst., Japan. 1951.
- Helminthosporium papulosum Berg
11616 CBS. 1953.
- Helminthosporium portulacae Rader
10405 W.E. Rader, Shell Oil Co., Modesto, Calif. 1948.
- Helminthosporium sativum Pammel, King and Bakke (= Cochliobolus sativus [Ito and Kuribayashi] Drechsler)
9639 Alice L. Robert, USDA. 1944.
11404 A.L. Andersen, strain 16, Michigan State Coll. 1953.
- Helminthosporium setariae Sawada
11001 K. Kominami, strain 4065, Nagao Inst., Japan. 1951.
- Helminthosporium sorghicola Lefebvre and Sherwin
12111 Helen S. Yu, USDA. 1955.
- Helminthosporium teres Saccardo (= Pyrenophora teres [Diedeke] Drechsler)
9640 Alice L. Robert, USDA. 1944.

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- Helminthosporium tritici-repentis Diedeke (= Pyrenophora tritici-repentis Drechsler)
6715 J. E. Machacek, Canada Dept. Agric., Winnipeg. 1938.
- Helminthosporium turicum Passerini
11535, 11536 and 11537 Alice L. Robert, strains 53-A-17c, 53-B-10a and 53-B-12b, USDA. 1953.
- Helminthosporium victoriae Meehan and Murphy
12566 H. E. Wheeler, strain A56-2, Louisiana State Univ. 1956.
- Hemispora sp.
9476 A. E. de Arêa Leão, strain 1891, IOC. 1947.
- Heterosporium terrestre Atkinson
11419* R. G. Atkinson, Canada Dept. Agric., St. Catherines, Ontario. Mycologia, 1952, 44, 813.
- Heterosporium tschawytschae Doty and Slater
9915* M. S. Doty, strain YED 1X, Northwestern Univ. 1945. Amer. Midland Nat., 1946, 36, 663.
- Histoplasma capsulatum Darling
8136 T. Benedek, Northwestern Univ. Med. School, Chicago. 1941.
10230 and 10884 C. W. Emmons, strains 6510 and 6526, NIH. 1951.
From clinical histoplasmosis.
10886 and 10888 C. W. Emmons, strains 6613 (rat) and 6620 (soil). 1951.
- 11378 G. H. Scherr, strain D, Creighton Univ., Omaha, Nebr.
From clinical histoplasmosis.
- 11407 and 11408 C. W. Emmons, strains 6621 (human) and 6617 (skunk), NIH. 1952. Maintained in yeast phase.
- 11656 L. Ajello, strain A-721, CDC. 1953. From soil.
- 12700 C. W. Emmons, strain 6624 (human), NIH. 1956. Maintained in yeast phase.
- Hormodendrum compactum Carrion
10222* C. W. Emmons, strain 8605, NIH. A. L. Carrion. From clinical chromoblastomycosis.
- Hormodendrum hordei Bruhne
12092 R. G. Atkinson, strain 22, Canada Dept. Agric., St. Catherines, Ont. 1955. From soil.
- Hormodendrum pedrosoi: See Phialophora pedrosoi
- Humicola grisea Traeen
6725 (Monotospora daleae) J. E. Machacek, Canada Dept. Agric., Winnipeg. 1938. QMRDC strain 542. Mycologia, 1953, 45, 951.
11714 K. Sato, strain 4968, IFO. 1954.
- Humicola spp.
11012 D. Perlman, strain SS 210, Squibb Inst. Med. Res., New Brunswick, N.J. 1951.
11743 P. B. Marsh, strain BPI 1.2, USDA. 1953.
- Hymenochaete agglutinans Ellis
12593 CBS. 1956. R. W. Davidson, strain 71707R.
- Hymenochaete tabacina (Sowerby) Léveillé
9394 J. W. Sinden, strain Overholts 24847-R, Pennsylvania State Coll. 1947.

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- Hypoloma sublateritium Schaeffer
 9413 J. W. Sinden, strain Overholts 24856, Pennsylvania State Coll. 1947.
- Hypocrea gelatinosa Tode ex Fries
 7476 (Trichoderma viride) G.R. Bisby, CMI. 1939. From single ascus.
- Hypocrea lenta Berkeley and Broome Tode ex Fries
 6485 J.A. Stevenson, strain 1750, USDA. 1940.
- Hypocrea rufa Persoon ex Fries
 7474 (Trichoderma viride) G.R. Bisby, CMI. 1933. From single ascospore.
- Hypomyces ipomoeae (Halstead) Wollenweber
 7595 (Fusarium javanicum var. radicicola) F.A. Weiss, USDA. 1939. From stem canker of lima bean.
- 12575 (Fusarium javanicum var. ensiforme) R.W. Thoma, strain SC 2346, Squibb Inst. Med. Res., New Brunswick, N.J. 1956.
- Hypomyces rosellus (Fries) Tulasne
 6676 J.E. Machacek, Canada Dept. Agric., Winnipeg. 1938.
- Hypomyces solani: See Fusarium solani.
- Hysterium pulicare Persoon ex Fries
 9557 E.S. Luttrell, strain 66, Georgia Agric. Expt. Sta. 1944.

- Idriella lunata Nelson and Wilhelm
 12574* P.E. Nelson, strain 28B, New York State Coll. Agric., Farmingdale. 1956. Mycologia, 1956, 48, 548.
- Irpea consorus Berkeley
 11574 K. Sato, strain 5309, IFO. 1953.
- Itersonilia pyriformis Nyland
 10766* G. Nyland, Univ. of California, Davis. Mycologia, 1949, 41, 686.

- Kabatiella phoradendri (Darling) Harvey
 11129 J.M. Harvey, USDA, Fresno, Calif. 1952. From mistletoe leaf spot.
- Kabatiella phoradendri f. umbellulariae Harvey
 11130* J.M. Harvey. 1952. From anthracnose of Umbellularia. Madroño, 1951, 11, 162.
- Kellermannia anomala (Cooke) Hoehnel
 11327 F.A. Weiss, ATCC. 1952. From leaf spot of Yucca.
- Kernia brachytricha (Ames) Benjamin
 11223 (Magnusia brachytricha) L.M. Ames, ERDC. 1952.
- Kernia spirotricha Benjamin
 12126 R.K. Benjamin, Rancho Santa Ana Bot. Garden, Claremont, Calif. El Aliso, 1955, 3, 199 and 1956, 3, 344.
- Kloeckera africana (Klöcker) Janke
 10632 NRRL, strain Y-1274. 1951. E.M. Mrak.
- Kloeckera antillarum (Klöcker) Janke
 10633 NRRL, strain Y-1379. 1951. CBS.

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Kloeckera apiculata (Reess) Janke

- 2101 F. W. Tanner, Univ. of Illinois. 1950. NCTC strain 517,
NRRL Y-837.
9774 (Kloeckera brevis Lodder) P.R. Burkholder, strain 188,
Yale Univ. 1945. Assay of vitamins. J. Bact., 1944, 48, 385.
10634 NRRL, strain Y-1380. 1953. CBS.
10639 (Kloeckera lindneri var. pelliculosa) NRRL, strain Y-1573.
1951. CBS.

Kloeckera corticis (Klöcker) Janke

- 10635 NRRL strain Y-1381. 1951. CBS.

Kloeckera javanica (Klöcker) Janke

- 10636 NRRL, strain Y-1383. 1952. CBS.

Kloeckera jensenii (Klöcker) Janke

- 10637 NRRL, strain Y-1571. 1952. CBS.

Kloeckera lafarii (Klöcker) Janke

- 10638 NRRL, strain Y-1572. 1952. CBS.

Kloeckera magna (De Rossi) Janke

- 10640 NRRL, strain Y-1611. 1952. CBS.

Lasibolus equinus (Müller) Massee

- 11269 CBS. 1952.

Lentinus lepideus Fries

- 11453 Frances F. Lombard, strain 635, USDA. 1953.

- 12653 Frances F. Lombard, USDA. 1956. Madison (Forest Products Lab.) strain 534. E.E. Hubert strain 267.

Lentinus tigrinus Bulliard ex Fries

- 9406 J. W. Sinden, strain Overholts FP 50390-R. Pennsylvania State Coll. 1947.

- 11779 Frances F. Lombard, strain ERT-226, USDA. 1954.

Lenzites betulina Linnaeus ex Fries

- 11575 K. Sato, strain 4964, IFO. 1953.

Lenzites saeparia Wulff ex Fries

- 9419 J. W. Sinden, strain Overholts 24852-R, Pennsylvania State Coll. 1947.

- 12677 Frances F. Lombard, Madison strain 604, USDA. 1956.

Lenzites trabea Persoon ex Fries

- 8715 R. W. Davidson, USDA. 1942.

- 11539 Frances F. Lombard, strain FP 39264, USDA. 1953.
Madison strain 617.

Lepiota procera Scopoli ex Fries

- 10937 W.F. Jeffers, Univ. of Maryland. 1951.

Leptodiscus terrestris Gerdemann

- 11897* J.W. Gerdemann, strain 4-8, Univ. of Illinois. 1954.
Phytopath., 1954, 44, 451.

Lichtheimia: See Absidia

Linderina pennispora Raper and Fennell

- 12442* NRRL, strain 2237. 1956. Amer. J. Bot., 1952, 39, 81.

Lipomyces lipoferus (den Dooren de Jong) Lodder and Kreger-van Rij
10742 NRRL, strain Y-1351. 1948.

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- Lipomyces starkeyi Lodder and Kreger-van Rij
12659* NRRL, strain Y-1389. 1956. R. L. Starkey strain 74a.
- Lophotrichus ampullus Benjamin
11220 L. M. Ames, ERDC. 1952.
- Lophotrichus martinii Benjamin
11221 L. M. Ames, ERDC. 1952.
- Macrophomina phaseoli (Maublanc) Ashby
6497 J. A. Stevenson, strain 1972, USDA. 1938.
12265 (Sclerotium bataticola) L. W. Durrell, Colorado A. and M. Coll. 1955.
- Madurella americana Gammel
9463 A. E. de Arêa Leão, strain 1182, IOC. 1947.
- Madurella grisea MacKinnon et al.
10793 and 10794 J. E. MacKinnon, strains 852 and 927, Inst. Higiene, Montevideo. 1950. From clinical maduramycosis.
- Magnusia brachytricha and M. spirotricha: See under Kernia
- Malbranchea pulchella Saccardo and Penzig
9989 W. W. Diehl, strain 1945, USDA. 1946.
- Marasmius peronatus Bolton ex Fries
12114 CBS. 1955. Monosporous isolate
- Melanconium fuligineum (Saccardo and Viala) Cavara
11174 V. G. Lilly, strain 241, West Virginia Univ. 1952. Assay of thiamine. Mycologia, 1951, 43, 625.
- Melanospora damnosa (Saccardo) Lindau
12339 CBS. 1955.
- Melanospora parasitica Tulasne
11103 CBS. 1951. On Isaria farinosa.
- Melanospora zamiae Corda
12340 CBS. 1955.
- Mermoniella echinata (Rivolta) Galloway
11973 E. G. Simmons, strain 1225, QMRDC. 1954. AMC strain 37. Military specifications for fungus resistance tests.
- Merulius americanus Burt
11483 Frances F. Lombard, strain 97366-Sp, USDA. 1950.
- Merulius lacrymans Jacquin ex Fries
4798 NCTC, strain 2309. 1932.
11484 and 11485 Frances F. Lombard, strains H-595-R and 90876-R, USDA. 1953.
- Microascus trigonosporus Emmons and Dodge
16151 W. W. Diehl, USDA. 1946. M. D. Whitehead, Oklahoma State Coll. From soybean seed.
- Microsporum audouini Gruby
9079 C. W. Emmons, strain 233, NIH. 1943.
10008 and 10216 C. W. Emmons, strains 239 and 243, NIH. 1947. From scalp ringworm.
11347 and 11348 C. W. Emmons, strains 249 and 250. 1952. From scalp ringworm.
12332 and 12333 K. Sato, strains 6074 and 6075, IFO. 1955.

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Microsporum canis Bodin

- 9865 A.B. Hoerlein, strain 1019, Cornell Univ. 1945. From cat.
10214 C.W. Emmons, strain 237, NIH. 1947. From scalp ringworm.
11621 and 11622 M.L. Littman, strains Vasquez and Robinson, Mt.
Sinai Hospital, New York, N.Y. 1953. From clinical derma-
tophytosis.

Microsporum gypseum (Bodin) Guiart and Grigorakis

- 6286 H.W. Schoening, USDA. 1938. From guinea pig.
9083 C.W. Emmons, strain 235, NIH. 1943.
10215 C.W. Emmons, strain 238. 1947. From tinea favosa.
11395 M.A. Gordon, strain A582, CDC. 1952. From soil.
11658 L. Ajello, strain A 723, CDC. 1953. From soil.

Microsporum nanum Fuentes

- 11832* C.A. Fuentes, Univ. of Havana. 1954. Mycologia, 1956, 48,
614.

Microthyriella rubi Petrak

- 11510 W.C. Snyder, Univ. of California, Berkeley. 1953.

Monascus albidus Sato

- 11384 K. Sato, strain 4489, IFO. 1952.

Monascus purpureus Went

- 6405 J.G. Harrar, Virginia Agric. Expt. Sta., Blacksburg. 1938.

Monilochaetes infuscans Halsted ex Harter

- 12281 W.F. Jeffers, Univ. of Maryland. 1955.

Monotospora brevis (Gilman and Abbott) Mason

- 9472 A.E. de Arêa Leão, strain 1761, IOC. 1947.

Monotospora daleae: See Humicola grisea

Morchella esculenta (Linnaeus) Persoon

- 10968 Frances F. Lombard, strain S, USDA. 1951.

Mortierella alpina Peyronel

- 8979 V.M. Cutter, Jr., strain 160, Cornell Univ. 1942.

Mortierella pusilla Oudemans

- 8978 V.M. Cutter, Jr., strain 170, Cornell Univ. 1942.

Mortierella pusilla var. isabellina (Oudemans) Zycha

- 11715 K. Sato, strain 5426, IFO. 1954.

Mucor abundans Povah

- 11010 D. Perlman, strain SS 192, Squibb Inst. Med. Res., New
Brunswick, N.J. 1951.

Mucor adventitius Oudemans var. aurantiacus Lendner

- 8768 and 8772 V.M. Cutter, Jr., strains 215 and 201, Cornell
Univ. 1942. From vegetable seeds.

Mucor christianiensis: See Circinella umbellata

Mucor circinelloides van Tieghem

- 1209 A.F. Blakeslee, CIW. 1938.

- 8542 (-) D.H. Linder, Harvard Univ. 1942. A.F. Blakeslee strain C81.

Mucor dubium Wehmer

- 8540 D.H. Linder, Harvard Univ. 1942. A.F. Blakeslee strain
C973.

Mucor fragilis Bainier

- 10777 CBS. 1950.

Mucor genevensis Lendner

- 8976 V.M. Cutter, Jr., strain 88, Cornell Univ. 1942.

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- Mucor griseo-cyanus Hagem
1207a (+) and 1207b (-) A.F. Blakeslee, CIW. 1938.
- Mucor hiemalis Wehmer
1205 (-) A.F. Blakeslee, CIW. 1938.
8690 NRRL, strain 1419. 1942.
8977a (+) and 8977b (-) V.M. Cutter, Jr., strains 82 and 83, Cornell Univ. 1942.
- Mucor hiemalis var. albus Lendner
6800 (-) A.F. Blakeslee, CIW. 1938.
- Mucor javanicus Wehmer
8770 V.M. Cutter, Jr., strain 208, Cornell Univ. 1942. From corn seed.
- Mucor microsporum Namyslowski
8541 D.H. Linder, Harvard Univ. 1942. A.F. Blakeslee strain C75.
- Mucor mucedo Brefeld
7941 V.M. Cutter, Jr., strain 65, Cornell Univ. 1941.
9635 (-) D.H. Linder, strain C 1032, Harvard Univ. 1944.
9836 and 9838 V.M. Cutter, Jr., strains 544 and 191. 1945.
- Mucor parasiticus Bainier
6476 J.A. Stevenson, strain 1270, USDA. 1938.
- Mucor plumbeus Bonorden
4740 (Mucor spinosus) CBS. 1931.
6795 (+) A.F. Blakeslee, CIW. 1938.
8773 V.M. Cutter, Jr., strain 151, Cornell Univ. 1942. From pea seed.
- Mucor plumbeus var. spinosus Lendner
8771 V.M. Cutter, Jr., strain 204, Cornell Univ. 1942. From pea seed.
- Mucor racemosus Fresenius
1216a (+) and 1216b (-) A.F. Blakeslee, CIW. 1938.
7928 and 7935 V.M. Cutter, Jr., strains 28 and 52, Cornell Univ. 1941.
- Mucor ramannianus Moeller
9515 O. Felsenfeld, Chicago Med. School. 1944.
9628 V.M. Cutter, Jr., Cornell Univ. 1944. G.W. Martin.
- Mucor recurvus Butler
11265* E.E. Butler, Univ. of Minnesota. 1952. Mycologia, 1952, 44, 561.
- Mucor rouxianus (Calmette) Wehmer
4855 and 5857 E.B. Fred, Univ. of Wisconsin. 1932. A.F. Blakeslee strains C 1067 and C 980.
8097 C.P. Hegarty, strain 704, Georgetown Univ. 1941. G. Knaysi.
- Muellerella nigra Routien
12756* J.B. Routien, strain 17M48, Chas. Pfizer Co., Brooklyn, N.Y. 1957. Bull. Torrey Bot. Club, 1956, 83, 403.
- Mycelliophthora inflata Burnside
10843 CBS. 1951. C.E. Burnside. From honey bee.
- Mycocandida riboflavina C.W. Dodge
11155 NRRL, Anheuser-Busch strain 921. 1952.
- Mycoderma cerevisiae, M. lafarii, and M. vini: See Candida mycoderma
- Mycoderma lipolytica: See Candida lipolytica

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Mycoderma spp.

- 6432 L.A. Rogers, USDA. 1938. From lactic starter.
9225 M. Rogosa, USDA. 1943. From Ga lactic starter.

Mycogone perniciosa Magnus

- 10934 W.F. Jeffers, Univ. of Maryland. 1951. T.T. Ayers, USDA.
From cultivated mushroom.

Mycogone sp.

- 11340 W.F. Jeffers, 1952. T.T. Ayers strain 378.

Mycosphaerella caryigena (Ellis and Everhart) Hoehnel

- 12737 (*Cercospora* *caryigena*) R.H. Converse, strain DS-1,
Oklahoma A. and M. Coll. 1957.

Mycosphaerella ligulicola Baker et al.

- 10748 (*Ascochyta chrysanthemi*) L.H. Davis, Univ. of California,
Los Angeles. 1949. *Phytopath.*, 1949, 39, 799.

Mycotypha dichotoma Wolf

- 12134* J.A. Stevenson, USDA. 1955. F.A. Wolf. From pine seed.

Mycotypha microspora Fenner

- 8982* V.M. Cutter, Jr., strain 117, Cornell Univ. 1942.

Myiocopron smilacis (De Notaris) Saccardo

- 9459 and 9550 E.S. Luttrell, strains 1 and 7, Georgia Agric. Expt.
Sta. 1944.

Myriangium asterinosporum (Ellis and Everhart) Miller

- 11179 A.E. Jenkins, strain 176, USDA. 1951. From *Crataegus*.

Myriangium catalinae Fairman

- 11180 Anna E. Jenkins, strain 633, USDA. 1951. From *Salvia*.

Myrothecium verrucaria Ditmar ex Fries

- 9095 (*Mettarhizium glutinosum*) P.B. Marsh, strain 1334.2, USDA.
1943. Military specifications for fungus resistance tests.
QMRDC strain 460, NRRL 2003.

Nadsonia elongata Konokotine

- 10644 NRRL, strain Y-1568. 1949. CBS.

- 10646 (*Nadsonia rickteri*) NRRL, strain Y-1617. 1952. CBS.

Nadsonia fulvescens (Nadson and Konokotine) Sydow

- 10645 NRRL, strain Y-991. 1949. C.B. van Niel.

Nectria cinnabarina Tode ex Fries

- 11432 CBS, strain I 1a. 1953.

Nectria galligena Bresadola

- 11684 and 11685 CMI, strains 12280 and 12280b. 1953. From twigs
of *Fraxinus*.

Nectria gliocladiooides Smalley and Hansen

- 12881* E.B. Smalley, Univ. of Wisconsin. 1957. *Mycologia*, 1957,
49, 529.

Nematospora coryli Peglion

- 10647 NRRL, strain Y-984. 1949. E.M. Mrak.

- 10648 (*Nematospora nagpuri*) NRRL, strain Y-1569. 1949. CBS.

- 10661 (*Nematospora phaseoli*) NRRL, strain Y-1618. 1949. CBS.

Neocosmospora vasinfecta Smith

- 11686 CMI, strain 49786. 1953. From soil, Pakistan.

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- Neonectria caespitosa (Fuckel) Wollenweber
6677 (Cylindrocarpon ehrenbergii) J. E. Machacek, Canada Dept. Agric., Winnipeg. 1938.
- Neurospora crassa Shear and Dodge
9277 G. W. Beadle, strain 34486 (sex A), California Inst. Technol. 1944. Assay of choline.
- 9278 G. W. Beadle, strain 1633 (sex A). 1944. Assay of p-aminobenzoic acid.
- 9279 G. W. Beadle, strain 1 (wild type, sex A). 1944.
- 9344 G. W. Beadle, strain 33757-4637 (sex A). 1947. Assay of leucine.
- 9683 G. W. Beadle, strain 37401 (sex a). 1945. Assay of inositol.
- 10333 G. W. Beadle, strain 9185-H-SA (sex A). 1948. Assay of thiamine.
- 10334 G. W. Beadle, strain 51505-3003-8 (sex a). 1948. Assay of proline.
- 10335 G. W. Beadle, strain 4545 (sex a). 1948. Assay of lysine.
- 10336 and 10337 G. W. Beadle, strains Abb4 (wild type A) and Abb12 (wild type A). 1948.
- 10767 G. W. Beadle, strain 65001 (sex a). 1950.
- 10780 G. W. Beadle, strain 38706. 1950. Assay of methionine.
- 10815 and 10816 B. O. Dodge, strains 5256A and 5297a, New York Botanical Garden. 1950. G. W. Beadle.
- 11063 G. W. Beadle, strain 28610. 1951. Assay of adenine and hypoxanthine.
- 11519 and 11520 G. W. Beadle, strains 3416 R1A and 4540 R2A. 1953. Require nicotinic acid.
- 11521 G. W. Beadle, strain 39401 R1. 1953. Requires tryptophane and niacin.
- 11943 Mary B. Mitchell, strain 94R1a, California Inst. Technol. 1954. Requires histidine.
- 11993 Mary B. Mitchell, strain 1298. 1954. Requires uridine.
- 12623 H. K. Mitchell, strain 36601, California Inst. Technol. 1956. Accumulates orotic acid and oxotidine. J. Biol. Chem., 1948, 172, 525.
- 12758 CMI, strain 68614. 1957. D. H. Smyth, strain 3411
- Neurospora intermedia Tai
11513, 11514 and 11515 E. Quisumbing, strains X, X-1 and X-2, Philippine National Museum. 1952. Hydrolysis of starch.
- Neurospora sitophila Shear and Dodge
9276 G. W. Beadle, strain 299 (sex A), California Inst. Technol. 1944. Assay of pyridoxine and biotin.
- Neurospora tetrasperma Shear and B. O. Dodge
6484 J. A. Stevenson, strain 1396, USDA. 1938. Homothallic.
- 9457 V. M. Cutter, Jr., Yale Univ. 1948. Homothallic.
- Nigrospora oryzae (Berkeley and Broome) Petch
11068 J. A. Stevenson, USDA. 1951.
- 12771 R. D. Muir, strain M 332, Searle and Co., Chicago. 1957. From road tar.
- Nigrospora sphaerica (Saccardo) Mason
11687 CMI, strain 46685. 1953. From orchard grass.

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Nigrospora sphaerica (Continued)

- 12261 L. W. Durrell, Colorado A. and M. College, Fort Collins.
1955.
12772 R. D. Muir, strain M 335, Searle and Co., Chicago. 1957.
QMRDC strain 1253.

Nigrospora spp.

- 12773 and 12774 R. D. Muir, strains M 333 and M 334. QMRDC
strains 785 and 786.

Oidiodendron nigrum: See Trichosporium cerealis

Omphalia flava (Cooke) Maublanc and Rangel

- 12578 F. L. Wellman, USDA, Turrialba, Costa Rica. From coffee
tree.

Oospora: See also Geotrichum

Oospora fragrans Berkhoult

- 11247 (O. suaveolens) NRRL, strain Y-699. 1952. Massachusetts
Inst. Technol., strain 323.

Operculella padwickii Kheswalla

- 10083* B. B. Mundkur, strain GC 285, Agric. Res. Inst., New Delhi,
India. From chick pea. Indian J. Agric. Sci., 1941, 11, 316.

Ophiobolus fulgidus (Cooke and Peck) Saccardo

- 9556 E. S. Luttrell, strain 65, Georgia Agric. Expt. Sta. 1944.

Ophiobolus graminis Saccardo

- 11609 K. Sato, strain 5278, IFO. 1953.

- 12761 Elizabeth Turner, California Inst. Technol., Pasadena. 1957.
From winter wheat, England.

Ophiobolus graminis var. avenae Garrett

- 12762 Elizabeth Turner. 1957. From winter oats, Wales.

Ophiobolus herpotrichus (Fries) Saccardo

- 12279 CBS. 1955.

Ophiobolus miyabeanus Ito and Kurabayashi

- 11608 K. Sato, strain 5277, IFO. 1953.

Ophiostoma: See Ceratocystis

Ovulinia azaleae Weiss

- 11544, 11545 and 11546 F. A. Weiss, ATCC. 1953. From flower
blight of cultivated azaleas.

- 11896 Mavis R. Paton, Univ. of Glasgow. 1954. Ascospore culture.

Paecilomyces cremeo-rosei Chaves-Batista

- 12076* A. Chaves-Batista, strain 232, Univ. of Recife, Brazil. 1955.

Paecilomyces dactylethromorphis Chaves-Batista and Maia

- 11971* A. Chaves-Batista, strain 235. 1954.

Paecilomyces elegans

- 8301 T. Benedek, Northwestern Univ. 1941.

Paecilomyces varioti Bainier

- 1114 C. Thom, USDA. 1938. Mold of leather.

- 10121 C. Thom, strain 535-34, USDA. 1946. NRRL strain 1115.

- 10865 NRRL, strain 1282, 1951. K. Sakaguchi. Production of ethyl-
ene oxide dicarboxylic acid. Zblt. Bakt., Abt. II, 1939, 100, 302.

FUNGI AND YEASTS

Panus stipticus Bulliard ex Fries

11015 and 11016 Frances F. Lomoard, strains 57413-S and 71510-Sp, USDA. 1951.

Papularia sphaerosperma (Fries) Hoehnel

6732 J.E. Machacek, Canada Dept. Agric., Winnipeg. 1938.

Papulaspora stoveri Warren

11173 W.L. White, strain 177, Harvard Univ. 1952. From roots of sugar beet seedlings.

Papulaspora sp.

11341 W.F. Jeffers, Univ. of Maryland. 1952. T.T. Ayers strain 324. From cultivated mushroom.

Parasitella simplex Bainier

11077(-) NRRL, strain 1460. 1951.

Pellicularia koleroga Cooke

12129 E.C. Tims, Louisiana State Univ. 1955.

12576 F.L. Wellman, USDA, Turrialba, Costa Rica. From coffee tree.

Pellicularia filamentosa: See Rhizoctonia solani

Penicillium⁴

Penicillium aculeatum Raper and Fennell

10409 NRRL, strain 2129. 1948. *Mycologia*, 1948. 40, 535.

Penicillium adamentzi Zaleski

10407* NRRL, strain 737. 1948. *Thom* strain 5010.1. CBS.

Penicillium albidum Sopp

10408 NRRL, strain 2043. 1948. CBS.

Penicillium asperum (Shear) Raper and Thom

10410* NRRL, strain 715. 1948. *Thom* strain 5236.26. C.L. Shear.

Penicillium atramentosum Thom

10104* C. Thom, strain 4733.3, USDA. 1946. NRRL strain 795.

Penicillium aurantio-candidum Dierckx ex Biourge

10411* NRRL, strain 884. 1948. *Thom* strain 4733.6.

Penicillium aurantioviolaceum Biourge

10412 NRRL, strain 760. 1948. *Thom* strain 5534.9.

Penicillium aurantiovirens Biourge

10413* NRRL, strain 2138. 1948. G. Smith, London Sch. Hyg. and Trop. Med.

Penicillium avellaneum Thom and Turesson

10414 NRRL, strain 1938. 1948.

10119 C. Thom, strain 4401, USDA. 1946. NRRL strain 1005.

Penicillium baarnense van Beyma

10415* NRRL, strain 2086. 1948. CBS.

Penicillium bacillosporum Swift

10126* NRRL, strain 1025. 1946. *Thom* strain 5256.25. Marjorie E. Swift.

Penicillium biforme Thom

10416* NRRL, strain 885. 1948. *Thom* strain 39.

Penicillium botryosum Chaves-Batista and Maia

12068* A. Chaves-Batista, strain 32, Univ. of Recife, Brazil. 1955.

⁴ Cf. the type descriptions of species of Penicillium given in the Manual of the Penicillia by Raper and Thom (Williams and Wilkins, 1949) are not repeated here.

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- Penicillium brasiliense Chaves-Batista
 12072* A. Chaves-Batista, strain 56. 1955.
- Penicillium brefeldianum Dodge
 10417* NRRL, strain 2083. 1948.
- Penicillium brevicompactum Dierckx
 9056 NRRL, strain 864, 1943. Thom strain 4733.21.
 10418 NRRL, strain 2011. 1948. CBS, 1946.
- Penicillium camemberti Thom
 4845* C. Thom, strain 5, USDA. 1932. NRRL, strain 877. From French Camembert cheese.
 6985 W. Johnson, USDA. 1938. Gray variety used in manufacture of Camembert cheese.
- Penicillium canescens Sopp
 10419 NRRL, strain 910. 1938. Thom strain 2654.
- Penicillium capsulatum Raper and Fennell
 10420* NRRL, strain 2056. 1948. Mycologia, 1948, 40, 528.
- Penicillium carneolutescens G. Smith
 10421* NRRL, strain 2035. 1948. CBS.
- Penicillium casei Staub
 10422 NRRL, strain 844. 1948. Thom strain 5056.
- Penicillium caseicolum Bainier
 6986 W.T. Johnson, USDA. 1938. White variety used in manufacture of Camembert cheese.
 10387 and 10423* NRRL, strains 874 and 875. 1948. Thom strains 6 and 4640.440.
- Penicillium charlesii G. Smith
 8730* NRRL, strain 1887. 1942. G. Smith, London School Hyg. and Trop. Med.
- Penicillium chermesinum Biourge
 10424 NRRL, strain 2049. 1948.
- Penicillium chrysogenum Thom
 9480 NRRL, strain 1951. 1944. Prototype of high penicillin-yielding strains.
 10002 NRRL. 1946. Univ. of Wisconsin strain Q-176. High yielding penicillin strain developed by ultra-violet treatment of strain X-1612.
 10003 NRRL, strain 2000. 1946. Carnegie Inst. strain X-1612, developed by X-ray treatment of NRRL strain 1951.B25.
 10106* C. Thom, strain 26, USDA. 1946. NRRL strain 807.
 10107 C. Thom, strain 5034.11, USDA. 1946. NRRL strain 811. Production of gluconic acid.
 10134 NRRL, strain 1984.A. 1946. A substrain of Minnesota strain R 13.
 10238 NRRL, strain 1951.B25. 1947. Penicillin production in submerged culture.
 11702-11708 M.P. Backus, Univ. of Wisconsin. 1953. Seven strains of the Wisconsin "47" and "48" series of mutants selected for penicillin yield, now superseded by later selections.
 11709 and 11710 M.P. Backus, strains 49-133 and 49-2105, Univ. of Wisconsin. 1953. High yielding sporulating penicillin strains.

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Penicillium chrysogenum (Continued)

12687-12690 M.P. Backus, strains Wis. F3, F3-64, 51-20 and 53-414. 1956. High yielding nonpigmented penicillin strains.

Penicillium citreoviride Biourge

10425 NRRL, strain 2046. 1948.

Penicillium citrinum Thom

8506 NRRL, strain 1843. 1942. G. Smith, London School Hyg. and Trop. Med. Produces citrinin. Roy. Soc. London, Phil. Trans., Ser. B, 1931, 220, 269.

9849 U.S. Bureau of Standards, strain 11. 1945. NRRL strain 756; QMRDC 1226. Fungus resistance testing.

10105 C. Thom, strain 5261.6, USDA. 1946. NRRL strain 806.

11972 A. Chaves-Batista, strain 247, Univ. of Recife, Brazil. 1954.

Penicillium claviforme Bainier

9257 NRRL, strain 1002. 1943. Thom strain 4733.39.1. Production of claviformin (patulin).

10426 NRRL, strain 2031. 1948. CBS.

Penicillium clavigerum Demelius

10427 NRRL, strain 1003. 1948. Thom strain 5424.237.

Penicillium commune Thom

10428* NRRL, strain 890. 1948. Thom strain 23; QMRDC 1269.

Penicillium corylophilum Dierckx

9784 NRRL, strain 802. 1945. Thom strain 4733.42.

Penicillium corymbiferum Westling

10429 NRRL, strain 2032. 1948. CBS.

Penicillium crustosum Thom

9845 NRRL, strain 969. 1945. Thom strain 5730.3.

10430 NRRL, strain 968. 1948. Thom strain 5461.448.

Penicillium cyaneofulvum Biourge

10431* NRRL, strain 837. 1948. Thom strain 4733.47.

11923 E.G.D. Murray, McGill Univ., Montreal. 1954.

Penicillium cyaneum (Bainier and Sartory) Biourge

10432* NRRL, strain 775. 1948. Thom strain 4640.422.

Penicillium cyclopium Westling

7615 F.A. Weiss, strain 766, USDA. 1939.

8507 NRRL, strain 942. 1942. Thom strain 4733.48.

8731 NRRL, strain 1888. 1942. H. Raistrick, strain 123, London School Hyg. and Trop. Med. Production of penicillic acid.

10433 NRRL, strain 1899. 1948. H.W. Florey, strain M-22, Oxford Univ. Production of penicillic acid.

Penicillium cyclopium Westling var. echinulatum Raper and Thom

10434* NRRL, strain 1151. 1948.

Penicillium daleae Zaleski

10435* NRRL, strain 2025. 1948. CBS.

Penicillium decumbens Thom

10436 NRRL, strain 742. 1948. Thom strain 5330.

Penicillium digitatum Saccardo

10650 NRRL, strain 786. 1946. Thom strain 176. Green mold of citrus fruit.

Penicillium diversum Raper and Fennell

10437* NRRL, strain 2121. 1948.

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- Penicillium diversum var. aureum Raper and Fennell
 10438* NRRL, strain 1074. 1948.
- Penicillium duclauxi Delacroix
 9121 NRRL, strain 1031. 1943.
 10439 NRRL, strain 1030. 1948. Thom strain 4733.53.
 10440 NRRL, strain 2020. 1948.
- Penicillium duponti Griffon and Maublanc
 10518 NRRL, strain 2155. 1948. R. Emerson, strain 26. From
 retting of guayule; thermophilic.
- Penicillium egyptiacum van Beyma
 10441* NRRL, strain 2090. 1948. CBS.
- Penicillium ehrlichii Klebahn
 10442* NRRL, strain 708. 1948. Thom strain 5226. Hydrolyzes pectin.
- Penicillium expansum Link
 7861 C. Thom, strain 4852, USDA. 1940. NRRL strain 976.
 Blue mold rot of apples.
- Penicillium fellutanum Biourge
 10443 NRRL, strain 746. 1948.
- Penicillium frequentans Westling
 10103 C. Thom, strain 4733.5. USDA. 1946. NRRL strain 766.
 10444 NRRL, strain 1915. 1948. G. Smith, strain Ad. 6, London
 School Hyg. and Trop. Med.
 11080 P. W. Brian, Butterwick Res. Lab., Welwyn, England. 1951.
 . NRRL strain 532. Produces frequentin.
- Penicillium funiculosum Thom
 8725 (Penicillium pinophilum) NRRL, strain 1032a. 1942.
 9644 W. H. Weston, Harvard Univ. 1944. QMRDC strain 391.
 Military specifications for fungus resistance tests.
 9846 NRRL, strain 1035. 1945. Thom strain 5403.53.
 10446 NRRL, strain 1768. 1948. C. W. Hesseltine, Univ. of
 Wisconsin.
 11797 P. B. Marsh, strain 66, USDA. 1954. QMRDC strain 474.
 Conidial strain, nonascigerous.
- Penicillium fuscum (Sopp) Raper and Thom
 10477 NRRL, strain 721. 1948. Thom strain 5179.4.
- Penicillium gladioli Machacek
 9437 P. W. Brian, Butterwick Res. Lab., Welwyn, England. 1947.
 Produces gladiolic acid. Nature, 1946, 157, 697.
 10448 NRRL, strain 939. 1948. Thom strain 4885. Lucia McCulloch,
 USDA. From blue mold rot of gladiolus corms.
- Penicillium granulatum Bainier
 10450 NRRL, strain 2036. 1948.
- Penicillium griseofulvum Dierckx (? P. terrestre Jensen)
 11885 NRRL, strain 2300. 1954. Raistrick strain P-38. Production
 of griseofulvin.
- Penicillium helicum Raper and Fennell
 10451* NRRL, strain 2106. 1948. Mycologia, 1948, 40, 515.
- Penicillium herquei Bainier and Sartory
 10118*. C. Thom, strain 4640.447, USDA. 1946. NRRL strain 1040.
- Penicillium humuli van Beyma
 10452* NRRL, strain 872. 1948. Thom strain 5633.3. CBS.

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- Penicillium implicatum Biourge
 10453 NRRL, strain 2054. 1948.
- Penicillium islandicum Sopp
 10127 C. Thom, strain 658.144.2, USDA. 1946. NRRL strain 1036.
- Penicillium italicum Wehmer
 10129 C. Thom, strain 4733.126, USDA. 1946. NRRL strain 982.
 Blue mold of citrus fruit.
- 10454 NRRL, strain 983. 1948. Thom strain 5066.1. H.S. Fawcett,
 Univ. of California.
- Penicillium janthinellum Biourge
 10069 C. Thom, strain 5019, USDA. 1946. NRRL strain 904.
 10455 NRRL, strain 2016. 1948.
- Penicillium javanicum van Beyma
 9099* NRRL, strain 707. 1943. Thom strain 5117.
- Penicillium jensenii Zaleski
 10456* NRRL, strain 909. 1948. Thom strain 5010.10. CBS.
- Penicillium kapuscinskii Zaleski: See also P. ochrochloron
 10457* NRRL, strain 2147. 1948. CBS.
- Penicillium lanosocoeruleum Thom
 10459* NRRL, strain 888. 1948. Thom strain 2543a.
- Penicillium lanosogriseum Thom
 10460* NRRL, strain 894. 1948. Thom strain 2746.2a.
- Penicillium lanosoviride Thom
 10461* NRRL, strain 879. 1948. Thom strain 5034.12.
- Penicillium lanosum Westling
 10458* NRRL, strain 2009. 1948. CBS.
- Penicillium lapidosum Raper and Fennell
 10462* NRRL, strain 718. 1948. E.J. Cameron, NCA.
- Penicillium lavendulum Raper and Fennell
 10463* NRRL, strain 2146. 1948. Mycologia, 1948, 40, 530.
- Penicillium levitum Raper and Fennell
 10464* NRRL, strain 705. Thom strain 5521. Mycologia, 1948, 40,
 511.
- Penicillium lilacinum Thom
 7748 L.S. Stuart, USDA. 1940. "White mold" of leather.
 10114* C. Thom, strain 8, USDA. 1946. NRRL strain 895.
- Penicillium lividum Westling
 10102 C. Thom, strain 2697, USDA. 1946. NRRL strain 754.
- Penicillium luteum Zukal: See also P. vermiculatum
 10125 C. Thom, strain B368, USDA. 1946. NRRL strain 1015.
 10465 NRRL, strain 2102. CBS.
 10466 NRRL, strain 1010. 1948. Thom strain 5357.208. G. R.
 Bisby, Univ. of Manitoba.
- Penicillium martensii Biourge
 10123 C. Thom, strain 5740.1, USDA. 1946. NRRL strain 953.
 10467 NRRL, strain 2027. 1948. CBS.
- Penicillium megasporum Orpurt and Fennell
 12322* Dorothy I. Fennell, strain 6879, QMRDC. 1955. NRRL
 strain 2232. Mycologia, 1955, 47, 233.
- Penicillium meleagrinum Biourge
 10468 NRRL, strain 836. 1948. Thom strain 5034.53.

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- Penicillium melinii Thom
 10136 C. Thom, strain 5692.8, USDA. 1946. NRRL strain 847.
 10469* NRRL, strain 2041. 1948. CBS.
- Penicillium miczynskii Zaleski
 10470* NRRL, strain 1077. 1948. CBS.
- Penicillium multicolor Grigorieva-Manoilova and Poradielova
 10471 NRRL, strain 2058. 1948.
- Penicillium nalgiovensis Laxa
 10472* NRRL, strain 911. 1948. Thom strain 5337.2. Ripening of
 Ellischauer cheese, Bohemia.
- Penicillium namyslowskii Zaleski
 11127 NRRL, strain 1070. 1952. CBS. Thom strain 5010.16.
- Penicillium nigricans Bainier ex Thom
 9439 (Penicillium janczewskii) P. W. Brian, strain 250. Butterwick
 Res. Lab., Welwyn, England. Produces griseofulvin.
- 10115* C. Thom, strain 4640.448, USDA. 1946. NRRL strain 915.
- Penicillium notatum Westling
 9178 NRRL, strain 1249.B21. 1943. E.R. Squibb and Sons, New
 Brunswick, N.J. Derivative of Fleming strain. Production
 of penicillin in surface culture.
 9179 NRRL, strain 832. 1943. Thom strain B9. Prototype strain
 for penicillin production in submerged culture.
 9478 NRRL, strain 824. Thom strain 144.5112.1. Original
 penicillin strain of Alexander Fleming, 1928.
 9479 NRRL, strain 1950. 1944. Production of penicillin in sub-
 merged culture.
 10108* C. Thom, strain 2541, USDA. 1946. NRRL strain 821.
 11625 NRRL, strain 1978B2. 1953.
- Penicillium novae-zeelandiae van Beyma
 10473* NRRL, strain 2128. 1948. CBS.
- Penicillium ochraceum Bainier ex Thom
 10112 C. Thom, strain 4424A, USDA. 1946. NRRL strain 869.
 10474 NRRL, strain 871. 1948. Thom strain B450.
- Penicillium ochrochloron Biourge
 9112 (also 9824) (P. kapuscinskii and Penicillium sp.) G. A.
 Greathouse, strain 1336.2, USDA. 1945. NRRL strain 744;
 QMRDC 477. Copper tolerant. Military specifications for
 fungus resistance testing.
- Penicillium olivinoviride Biourge
 10475* NRRL, strain 2028. 1948. CBS.
- Penicillium oxalicum Currie and Thom
 10476 NRRL, strain 790. 1948. Thom strain 5427.
- Penicillium pallidum G. Smith
 10478* NRRL, strain 2037. 1948. G. Smith, strain 76, London
 School Hyg. and Trop. Med.
- Penicillium parvum Raper and Fennell
 10479* NRRL, strain 2095. 1948. Mycologia, 1948, 40, 508.
- Penicillium patulum Bainier
 9260 NRRL, strain 994. 1943. Thom strain 4640.454.
 10120 (P. urticae) C. Thom, strain 4640.455, USDA. 1946. NRRL
 strain 989.

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- Penicillium paxilli Bainier
10480 NRRL, strain 2008. 1948.
- Penicillium phoeniceum van Beyma
10481* NRRL, strain 2070. 1948. CBS.
- Penicillium piceum Raper and Fennell
10519* NRRL, strain 1051. 1948. *Mycologia*, 1948, 40, 533.
- Penicillium piscarium Westling
9052 NRRL, strain 1076. 1943. Thom strain 4733.97.
10482* NRRL, strain 1075. 1948. Thom strain 2549.
12109 NRRL, strain 2022. 1955. P.B. Marsh, strain 15.1, USDA;
QMRDC 471. Copper- and mercury-tolerant.
- Penicillium psittacinum Thom
10116* C. Thom, strain 4733.12, USDA. NRRL strain 932.
- Penicillium puberulum Bainier
8508 NRRL, strain 845. 1942. Thom strain 5479; G. Smith strain
Ad-31.
8732 NRRL, strain 1889. 1942. Raistrick strain Ad-113.
10483 NRRL, strain 2040. 1948. CBS. Production of penicillic and
puberulic acids.
- Penicillium purpurogenum Stoll
9777 C. Thom, strain 4279C, USDA. 1945. NRRL strain 1061.
10064 C. Thom, strain 5694.11, USDA. 1946. NRRL strain 1059.
- Penicillium purpurogenum Stoll var. rubrisclerotium Thom
10486 NRRL, strain 1066. 1948. Thom strain 5735.7.
- Penicillium purpureascens (Sopp) Biourge
10485* NRRL, strain 720. 1948. Thom strain 5297.144. G.R. Bisby.
Univ. of Manitoba.
- Penicillium raciborskii Zaleski
10488* NRRL, strain 2150. 1948. CBS.
- Penicillium raistrickii G. Smith
10490* NRRL, strain 2039. 1948. G. Smith strain 100.
- Penicillium ramuscum Chaves-Batista and Maia
12292* A. Chaves-Batista, strain 478, Univ. of Recife, Brazil. 1955.
- Penicillium resticulosum Birkinshaw et al.
10489* NRRL, strain 2021. 1948. G. Smith strain P-47.
- Penicillium restrictum Gilman and Abbott
11257 NRRL, strain 1748. 1952.
- Penicillium rolfssii Thom
10491* NRRL, strain 1078. 1948. Thom strain 32.
- Penicillium roqueforti Thom
6987, 6988 and 6989 W.T. Johnson, strains Danish, Hansen and
Johnson, USDA. 1938.
9295 NRRL, strain 858. 1944. Thom strain B-150.
10110* C. Thom, strain 18, USDA. 1946. NRRL strain 849. From
French roquefort cheese.
- Penicillium roseo-purpureum Dierckx
10101 C. Thom, strain 5112.2, USDA. NRRL strain 734.
10492* NRRL, strain 2064. 1948. CBS.
- Penicillium roseum: See *Gliocladium roseum*
- Penicillium rotundum Raper and Fennell
10493* NRRL, strain 2107. 1948. *Mycologia*, 1948, 40, 518.

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- Penicillium rubrum Stoll
 10520 NRRL, strain 1062. 1948. Thom strain 5103.
- Penicillium rugulosum Thom
 10128* C. Thom, strain 46, USDA. 1946. NRRL strain 1045.
- Penicillium sclerotiorum van Beyma
 10494* NRRL, strain 2074. 1948. CBS.
- Penicillium simplicissimum (Oudemans) Thom
 10495 NRRL, strain 902. 1948. E.M. Laughton, South Africa.
- Penicillium solitum Westling
 9923* NRRL, strain 937. 1948. Thom strain 2546.
- Penicillium soppi Zaleski
 10496* NRRL, strain 2023. CBS.
- Penicillium spiculisorporum Lehman
 10497 NRRL, strain 1028. 1948. Thom strain 5584.166.
- Penicillium spinulosum Thom
 9123 NRRL, strain 724. 1943. Thom strain 5711.
 10498 NRRL, strain 1750. 1948. Derived from type strain, Thom 45.
- Penicillium steckii Zaleski
 10499 NRRL, strain 2140. 1948.
- Penicillium stipitatum Thom ex Emmons
 10500* NRRL, strain 1006. 1948. C.W. Emmons.
- Penicillium stoloniferum Thom
 10111* C. Thom, strain 27, USDA. 1946. NRRL strain 859.
- Penicillium striatum Raper and Fennell
 10501* NRRL, strain 717. 1948. C.C. Williams, NCA. Mycologia, 1948, 40, 521.
- Penicillium sublateritium Biourge
 10502* NRRL, strain 2071. 1948. CBS.
- Penicillium tardum Thom
 10503 NRRL, strain 1073. 1948. Thom strain 4640.444.
- Penicillium terlikowskii Zaleski
 9438 P.W. Brian, strain 241, Butterwick Res. Lab., Welwyn, England. 1947. NRRL strain 1073. Produces gliotoxin.
- Penicillium terrestrae Jensen
 10122 C. Thom, strain 5034.8, USDA. 1946. NRRL strain 933.
 10505 NRRL, strain 934. 1948. Thom strain 5042.135.
- Penicillium thomii Maire
 1107 C. Thom, strain 5534.2, USDA. 1946. NRRL strain 703.
 10506 NRRL, strain 1640. 1948. D.H. Linder, Harvard Univ.
- Penicillium trzebinskii Zaleski
 10507* NRRL, strain 731. 1948. CBS. Thom strain 5010.27.
- Penicillium turbatum Westling
 9782* NRRL, strain 757. 1945. Thom strain 2545.
- Penicillium urticae Bainier: See P. patulum
- Penicillium variabile Sopp
 10508 NRRL, strain 1048. 1948.
- Penicillium varians G. Smith
 10509* NRRL, strain 2096. 1948. G. Smith, strain 91.
- Penicillium velutinum van Beyma
 10510* NRRL, strain 2069. 1948. CBS.

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Penicillium vermiculatum Dangeard

9776 P.B. Marsh, strain 1336.1, USDA. 1945. NRRL strain 2315; QMRDC 464. Military specifications for fungus resistance tests. Received as *P. luteum*.

10512 NRRL, strain 1019. 1948. Thom strain 5578.67.

Penicillium verruculosum Peyronel

10513 NRRL, strain 1050. 1948. Thom strain 5179.3.

Penicillium vinaceum Gilman and Abbott

10514* NRRL, strain 739. 1948. Thom strain 4894.15.

Penicillium viridicatum Westling

10117 C. Thom, strain 3028, USDA. 1946. NRRL strain 962.

10515 NRRL, strain 963. 1948. Thom strain 5740.2.

Penicillium waksmani Zaleski

10516* NRRL, strain 777. 1948. Thom strain 5010.36. CBS.

Penicillium wortmannii Klöcker

10236 W.W. Diehl, USDA. 1947.

10517 NRRL, strain 1017. Thom strain 4733.126.1.

Penicillium spp.

9112 G.A. Greathouse, strain 1336.2, USDA. See *P. ochrochloron*.

11598 R.W. Thoma, strain M 4202, E.R. Squibb and Sons, New Brunswick, N.J. U.S. Patent 2,753,290.

12667 P.F. Klens, strain 607, Nuodex Products Co., Elizabeth, N.J. 1956. Fungus resistance tests on textiles.

Periconia circinata (Mangin) Saccardo

9354 R.W. Leukel, USDA. 1947. From "milo blight" of sorghum.

Pericystis apis: See *Ascospaera apis*

Pestalotiopsis guepini (Desmazières) Steyaert

11543 F.A. Weiss, ATCC. 1953.

Pestalotiopsis royenae (Guba) Steyaert

11816 Chas. Pfizer and Co., Inc., Brooklyn, N.Y. 1954. QMRDC strain 531.

Pestalotiopsis westerdijkii Steyaert

10085 (*Pestalotia palmarum*) B.B. Mundkur, strain GC 244, Agric. Res. Inst., New Delhi, India.

11763 QMRDC, strain 381. 1954. Also known as strain Aust. and SN8. From canvas, New Guinea.

Pestalotiopsis sp.

11817 Chas. Pfizer and Co. 1954. QMRDC 795. From canvas, New Guinea.

Pezizella lythri (Desmazières) Shear and Dodge

6492 (*Hainesia lythri*) J.A. Stevenson, strain 1906, USDA. 1938. C.L. Shear, strain 1906. From cranberry.

Phialophora jeanselmei (Langeron) Emmons

10224 C.W. Emmons, strain 7824, NIH. 1947. From clinical mycetoma.

Phialophora melinii (Nannfeldt) Conant

6555 (*Cadopnora melini*) J.E. Machacek, Canada Dept. Agric., Winnipeg. 1938.

Phialophora pedrosoi (Brumpt) Emmons

3473 A.E. de Aréa Leão, strain 1885, IOC. 1947. From clinical chromoblastomycosis.

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Phialophora pedrosoi (Continued)

9941 and 10221 C. W. Emmons, NIH. 1947.

Phialophora verrucosa Medlar

- 4806 (*Cadophora americana*) F. D. Weidman, strain 2261, Univ. of Pennsylvania. 1932. From clinical blastomycosis.
 8687 NRRL, strain 1631. 1942.
 10223 C. W. Emmons, strain 8723, NIH. M. Moore, Missouri Bot. Gard.

Pholiota adiposa Fries

- 9393 J. W. Sinden, Overholts strain 24736, Pennsylvania State Coll. 1947.

Pholiota dura Bolton ex Fries

- 6768 J. A. Stevenson, USDA. 1938. R. Sprague, from wheat.

Phoma betae Frank

- 6504 J. A. Stevenson, strain 5352. USDA. 1938.

Phoma destructiva Plowright

- 9641 L. McCulloch, strain 31, USDA. 1944.

Phoma glomerata (Corda) Wollenweber and Hoch

- 6735 J. E. Machacek, Canada Dept. Agric., Winnipeg. 1938.

Phoma pigmentivora Massee (= *Aposphaeria violacea* Bertel)

- 12569 QMRDC, strain 502. 1956. R. K. S. Wood, Roy. Coll. Sci., London. Fungus resistance testing of white lead paint.

Phoma tuberosa Melhus et al.

- 11141 J. A. Stevenson, USDA. 1952.

Phomopsis citri Fawcett (= *Diaporthe citri* Wolf)

- 9054 E. West, Univ. of Florida. 1943. Stem-end rot of orange.

Phomopsis gardeniae Hansen and Barrett

- 12110 W. F. Jeffers, Univ. of Maryland. 1955. Stem canker of gardenia.

Phomopsis viticola (Reddick) Goidanich

- 12685 CBS. 1956. Dieback of grape.

Phomopsis sp.

- 12098 F. A. Weiss, ATCC. 1955. Dieback of azalea.

Phycomyces blakesleeanus Burgeff

- 6200 A. F. Blakeslee, CIW. 1937.

- 8743a (+) and 8743b (-) NRRL, strains 1554 and 1555. 1942. L. H. Leonian, West Virginia Univ.

Phycomyces nitens (Kunze) van Tieghem and le Monnier

- 9984 NRRL, strain 1468. 1946.

Phyllosticta richardiae Brooks

- 11352 CBS. 1952.

Phyllosticta sorghina Saccardo

- 12115 CBS. 1955.

Physalospora ilicis (Schleicher) Saccardo

- 11368 (*Phyllosticta ilicicola*) C. Driver, strain P-22-C, Louisiana State Univ. 1952.

Physalospora obtusa (Schweinitz) Cooke

- 11929 (*Physalospora malorum*) W. F. Jeffers, Univ. of Maryland. 1954.

Physalospora rhodina (Berkeley and Curtis) Cooke

- 10936 (*Diplodia theobromae*) W. F. Jeffers, Univ. of Maryland. 1954.

FUNGI AND YEASTS

Physalospora tucumanensis Spegazzini

- 12088 (*Colletotrichum falcatum*) B.A. Bourne, U.S. Sugar Corp., Clewiston Fla. 1955. Susceptible to antibiotic action of *Candida intermedia*.

Phytophthora cactorum (Lebert and Cohn) Schroeter

- 6419 H.S. Fawcett, strain 2006, Univ. of California, Riverside. 1938. From lemon, Argentina.
- 10091 H.S. Fawcett, strain 1933. 1946. CBS. From lilac, Netherlands.

Phytophthora cinnamomi Rands

- 10922 W.F. Jeffers, Univ. of Maryland. 1951. From roots of Viburnum.

- 11928 W.F. Jeffers. 1954. G.A. Zentmyer. From avocado root, California.

Phytophthora drechsleri Tucker

- 10923 W.F. Jeffers, Univ. of Maryland. 1951.

Phytophthora erythroseptica Pethybridge

- 10924 W.F. Jeffers, Univ. of Maryland. Muriel J. O'Brien, USDA. From potatoes, Idaho.

Phytophthora fragariae Hickman

- 10394 CBS. 1948.

- 11106 C.J. Hickman, strain 106-A (Race 1), Univ. of Birmingham, England. 1951. From strawberry red stele.

- 11107, 11108, 11109 and 11110 C.J. Hickman, strains R-4 (Race 2), R 11 (Race 3), R 13 (Race 4) and N 2 (Race 5). 1951.

- 11374 W.F. Jeffers, strain S, Univ. of Maryland. 1952. Pathogenic to Aberdeen variety of strawberry.

Phytophthora hibernalis Carne

- 11300 Mathilde Bensaude, strain B, Univ. of California, Berkeley. 1952. From orange fruit, Portugal.

Phytophthora infestans (Montagne) de Bary

- 9901 and 9976 Lillian C. Cash, strains 182 and Green Mountain, USDA. 1946.

- 9978, 10890 and 10891 Lillian C. Cash, strains 544, 201 and 583, USDA. 1951.

- 11409 and 11410 M.E. Gallegly, strains M-7 (Race 1) and M-13 (Race 3), West Virginia Univ. 1953. From tomato, W. Va.

- 12183 to 12191 M.E. Gallegly, West Virginia Univ. 1955. Strains designated by international agreement among potato breeders as follows: WV-1 (Potato race 0), G-C (Potato race 1), S-g (Potato race 1, 2), WV-5 (Potato race 1, 4), BC (Potato race 2, 4), N9 (Potato race 2, 3, 4), C 1234 (Potato race 1, 2, 3, 4), F₃ (Tomato race 1), 2T (Tomato race 1B).

- 12195 to 12199 M.E. Gallegly. Strains designated by international agreement among potato breeders as follows: C 123(S) (Potato race 1, 2, 3), 34.4 (Potato race 1, 2, 4), S-F (Potato race 1, 3, 4), 63 (Potato race 3), B (Potato race 4).

Phytophthora lateralis Tucker and Milbrath

- 11261* CBS, 1952. J.A. Milbrath, Oregon State Coll. From root rot of Chamaecyparis.

FUNGI AND YEASTS

- Phytophthora megasperma Drechsler
12316 CBS. 1955. E.M. Blackwell, CMI.
- Phytophthora palmivora Butler
12577 F.L. Wellman, USDA, Turrialba, Costa Rica. 1956. From cacao.
- Phytophthora parasitica Dastur
10925 W.F. Jeffers, Univ. of Maryland. 1951.
- Phytophthora parasitica var. nicotianae Tucker
10926 W.F. Jeffers, Univ. of Maryland. 1951. E.E. Clayton, USDA.
- Phytophthora phaseoli Thaxter
10927 W.F. Jeffers, Univ. of Maryland. 1951. R.A. Hyre, USDA.
- Phytophthora syringae Klebahn
11301 Mathilde Bensaude, Univ. of California. 1952. From lemon, Portugal.
- 11302 Mathilde Bensaude, Strain H. 1952. From lemon, Portugal.
- Phytophthora sp.
10928 W.F. Jeffers, Univ. of Maryland. 1951. F.A. Weiss, USDA.
From root rot of Saintpaulia.
- Pichia farinosa (Lindner) Hansen
2252 F.W. Tanner, Univ. of Illinois. 1935.
- Pichia fermentans Lodder
9768 (Pichia kluyveri) P.R. Burkholder, strain 15, Yale Univ.
1945.
- 10651 NRRL, strain Y-1619. 1950. CBS.
- Pichia membranaefaciens Hansen (Candida mycoderma)
2085 (Endomyces chodati) R. Chodat, Univ. of Geneva, Switzerland.
1928.
- 2254 F.W. Tanner, Univ. of Illinois. 1925. NRRL strain Y-847.
- 2605 (Zygotrichia chevalieri) F.W. Tanner. 1925. NRRL strain Y-221.
- 10649 NRRL, strain Y-368. 1950.
- 10650 NRRL, strain Y-1627. 1950. CBS.
- 10652 (Pichia mandshurica) NRRL, strain Y-1628. 1953. CBS.
- 10653 (Pichia neerlandica) NRRL, strain Y-1620. 1953. CBS.
- Pilobolus crystallinus (Wiggers) Tode
11353 CBS. 1952.
- Pilobolus kleinii van Tieghem
11505 A.C. Dornbush, strain X-93, Lederle Labs., Pearl River,
N.Y. 1953. Requires the growth factor, coprogen.
- Piptocephalis corymbifera Vuillemin
11112 CBS. 1951. Growing on Mucor.
- 12665 NRRL, strain 2385. 1956.
- Piptocephalis digitata Dobbs
12664 NRRL, strain 1535. 1956.
- Piptocephalis repens van Tieghem
11260 CBS. 1952. Growing on Mucor.
- Piricularia oryzae Briosi and Cavara
11802, 11803, 11804 and 11805 K. Kominami, strains 1138 (P3), 1139
(P4), 1140 (P5) and 1141 (P6), Nagao Inst., Japan. 1951.
- 11154 CBS, strain Savulescu. 1951.

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- Pityrosporum ovale (Bizzozero) Castellani and Chalmers
 12078 Shuh-wei Hwang, ATCC. 1955.
- Pleospora diaporthoides Ellis and Everhart
 9553 E.S. Luttrell, strain 58, Georgia Agric. Expt. Sta. 1944.
- Pleospora herbarum (Fries) Rabenhorst
 11681 (*Stemphylium botryosum*) F.A. Weiss, ATCC. 1953.
- Pleospora infectoria Fuckel
 12054 W.F. Jeffers, Univ. of Maryland. 1954. Chas. Pfizer Co., Inc., Brooklyn, N.Y., strain W-1948.
- Pleospora lycopersici El. et Em. Marchal
 10737 CBS. 1949.
- Pleospora phaeocomes (Rebentisch) Winter
 12418 J.H. Graham, strain 432 Bl, USDA, State Coll., Pa. 1955.
 Leaf spot of *Dactylis glomerata*.
- Pleurotus ostreatus (Jacquin) Fries
 9415, 9424 and 9427 J.W. Sinden, Overholts strains 24739, 24567-S and 24737, Pennsylvania State Coll. 1947.
- Pleurotus passeckerianus Pilát
 9416 J.W. Sinden, Overholts strain 24738, Pennsylvania State Coll. 1947.
- Podospora pauciseta (Cesati) Trevisan
 11930 (*Pleurage anserina*) W.F. Jeffers, Univ. of Maryland. 1954.
 12487a (+) and 12487b (-) CBS. 1956.
- Polyporus abietinus Dickson ex Fries
 9391 J.W. Sinden, Overholts strain 24731-R, Pennsylvania State Coll. 1947.
- Polyporus amorphus Fries
 12232 Frances F. Lombard, strain L-3291-R, USDA. 1955.
- Polyporus anceps Peck
 9352 R.W. Davidson, strain F.P. 71825-S, USDA. 1947. C. M. Christensen, Univ. of Minnesota.
- Polyporus betulinus (Bulliard) Fries
 9386 J.W. Sinden, Overholts strain 24858, Pennsylvania State Coll. 1947.
- Polyporus brumalis Persoon ex Fries
 9385 J.W. Sinden, Overholts strain 24800, Pennsylvania State Coll. 1947.
- Polyporus cinnabarinus (Jacquin) Fries
 11934 W.F. Jeffers, Univ. of Maryland. 1954. Chas. Pfizer and Co., Inc., strain 57071-S.
- Polyporus circinatus Fries
 9389 J.W. Sinden, Overholts strain 24437, Pennsylvania State Coll. 1947.
- Polyporus compactus Overholts
 9385 J.W. Sinden, Overholts strain 24785-R, Pennsylvania State Coll. 1947.
- Polyporus distortus (Schweinitz) Fries
 9382 J.W. Sinden, Overholts strain 24724-S, Pennsylvania State Coll. 1947.
- Polyporus frondosus Fries
 11936 W.F. Jeffers, Univ. of Maryland. 1954.

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Polyporus fumosus (Persoon) Fries

9384 J. W. Sinden, Overholts strain 24761-R, Pennsylvania State Coll. 1947.

Polyporus hirsutus (Wulff) Fries

9377 J. W. Sinden, Overholts strain 24710-R, Pennsylvania State Coll. 1947.

Polyporus lucidus Fries

9383 J. W. Sinden, Overholts strain 24778-S, Pennsylvania State Coll. 1947.

9422 J. W. Sinden, Overholts strain 25665-S, Pennsylvania State Coll. 1947.

Polyporus palustris Berkeley and Curtis

12849 Frances F. Lombard, USDA. 1957.

Polyporus rutilans Persoon ex Fries

10967 Frances F. Lombard, strain 2287, USDA. 1951.

Polyporus sanguineus Linnaeus ex Fries

10242 W. W. Diehl, USDA. 1947.

Polyporus schweinitzii Fries

9392 J. W. Sinden, Overholts strain 24675-S, Pennsylvania State Coll. 1947.

10013 R. W. Davidson, strain 71119, USDA. 1946.

Polyporus spraguei Berkeley and Curtis

9381 J. W. Sinden, Overholts strain 24658-S, Pennsylvania State Coll. 1947.

Polyporus sulphureus (Bulliard) Fries

9387 J. W. Sinden, Overholts strain 24681-S, Pennsylvania State Coll. 1947.

11411 Frances F. Lombard, strain 48603, USDA. Conidial culture.

Polyporus tulipiferus (Schweinitz) Overholts

9378 and 9426 J. W. Sinden, Overholts strains 24779-R and 24740-R, Pennsylvania State Coll. 1947.

11245 Frances F. Lombard, USDA. 1952. Madison strain 517. Used in wood preservation tests.

Polyporus versicolor Linnaeus ex Fries

11235 Frances F. Lombard, strain R-105, USDA. 1952.

12679 Frances F. Lombard, strain F.P. 72074, USDA. 1956. Madison strain 697. Wood preservation tests.

Polyporus volvatus Peck

12212 W.F. Jeffers, Univ. of Maryland. 1955.

Polyporus zonalis Berkeley

10089 R. W. Davidson, strain 55571, USDA. 1946.

Poria ambigua Bresadola

9408 J. W. Sinden, Overholts strain 24674-R, Pennsylvania State Coll. 1947.

Poria asiatica (Pilát) Overholts

12615 Frances F. Lombard, strain L-3453-Sp, USDA. 1956.

Poria incrassata (Berkeley and Curtis) Burt

7770 R. W. Davidson, USDA. 1940.

11236 Frances F. Lombard, USDA. 1952. Madison strain 563. Wood preservation tests.

FUNGI AND YEASTS

- Poria inermis Ellis and Everhart
9412 J. W. Sinden, Overholts strain 24798, Pennsylvania State Coll. 1947.
- Poria luteofibrata Baxter
9411 J. W. Sinden, Overholts strain 24679-R, Pennsylvania State Coll. 1947.
- 9958 R. W. Davidson, strain 2996, USDA. 1946.
- Poria monticola Murrill
9891 R. W. Davidson, strain 575, USDA. 1945.
- 11538 Frances F. Lombard, USDA. 1953. Madison strain 698. Wood preservation tests.
- Poria nigrescens Bresadola
11818 Frances F. Lombard, strain Lowe 3354, USDA. 1954.
- 12680 Frances F. Lombard, USDA. 1956. Madison strain 4963.
- Poria prunicola (Murrill) Saccardo and Trotter
11089 K. Kominami, strain 3075, Nagao Inst., Japan. 1951.
- Poria radiculosa Peck
12681 Frances F. Lombard, USDA. 1956. Madison strain 5096-29. Wood preservation tests.
- Poria sequoiae Bonar
11819 Frances F. Lombard, strain 4948, USDA. 1954.
- Poria subacida (Peck) Saccardo
11087 K. Kominami, Nagao Inst., Japan. 1951.
- 12241 Frances F. Lombard, strain Bud. 1077, USDA. 1955.
- Poria vaillantii (Fries) Cooke
11044 and 11045 Frances F. Lombard, strains Find. 14 and FP. 90877-R, USDA. 1951.
- 11074 Museum of Natural History, Paris, strain 992. 1951.
- Poria vaporaria Persoon ex Fries
11088 K. Kominami, Nagao Inst., Japan. 1951.
- Poria versipora (Persoon) Romell
9407 J. W. Sinden, Overholts strain 24848-R, Pennsylvania State Coll. 1947.
- Poria xantha (Fries) Cooke
11086 K. Kominami, Nagao Inst., Japan. 1951.
- Poria zameriensis (Pilát) Overholts
9409 J. W. Sinden, Overholts strain 24765-R, Pennsylvania State Coll. 1947.
- Psalliota campestris Linnaeus ex Fries
9672 E.B. Lambert, USDA. 1945.
- 10892 and 10893 E.B. Lambert, strains 347 and 348, USDA. 1951. Cultivated form.
- Pseudoeurotium multisporum (Saito and Minoura) Stolk
10970 (*Anix. opsis multispora*) K. Kominami, strain 2003, Nagao Inst., Japan. 1951.
- 11713 K. Sato, strain 5481, IFO. 1954.
- Pseudogymnoascus roseus Raillo
12262 L.W. Durrell, Colorado A. and M. Coll. 1955.
- Pseudopeziza medicaginis (Libert) Saccardo
12105 F.R. Jones, strain 602, Univ. of Wisconsin. 1955.

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- Pullularia fermentans Wynne and Gott
 12535* E.S. Wynne, Univ. of Texas, 1956. From granuloma of lymph node. J. Gen. Microbiol., 1956, 14, 512. Also the following strains, formally described as varieties:
- 12536 Var. fusca (Browne) Wynne and Gott.
 12537 Var. leaoi Wynne and Gott.
 12538 Var. melinii Wynne and Gott.
 12539 Var. schoenii Wynne and Gott.
 12734 Var. benedekii Wynne and Gott.
- Pullularia pullulans (de Bary and Loew) Berkhoult
 9348 and 9349 P.B. Marsh, strains Weber F 44 and J 364, USDA. 1947.
- 11942 (Candida malicola) R.H. Wallace, McGill Univ., Montreal. 1954.
- Pycnidiphora dispersa Clum
 12436* F.M. Clum, Michigan State Univ. 1956. Mycologia, 1955, 47, 899.
- Pyrenophaeta decipiens Marchal
 12264 L.W. Durrell, Colorado A. and M. Coll. 1955.
- Pyrenophaeta terrestris (Hansen) Gorenz et al.
 11321 R.H. Larson, Univ. of Wisconsin. 1952.
- Pythium aphanidermatum (Edson) Fitzpatrick
 12192 J.T. Middleton, Univ. of California, Riverside. 1955.
- Pythium aristosporum Vanterpool
 11101 CBS. 1951. T.C. Vanterpool.
- Pythium arrhenomanes Drechsler
 12531 A.L. Hooker, Univ. of Wisconsin. 1956.
- Pythium catenulatum Matthews
 10950 J.N. Couch, Univ. of North Carolina. 1951.
- Pythium debaryanum Hesse
 9998 C. Drechsler, strain 843, USDA. 1946.
 10393 CBS. 1948.
- Pythium deliense Meurs
 11433 CBS. 1953.
- Pythium graminicola Subramaniam
 10392 CBS. 1948.
- Pythium irregulare Buisman
 10951 J.N. Couch, Univ. of North Carolina. 1951.
 11120 CBS. 1952.
- Pythium mamillatum Meurs
 11121 CBS. 1952.
- Pythium paroecandrum Drechsler
 12532 A.L. Hooker, Univ. of Wisconsin. 1956.
- Pythium rostratum Butler
 12533 A.L. Hooker, Univ. of Wisconsin. 1956.
- Pythium splendens Braun
 12534 A.L. Hooker, Univ. of Wisconsin. 1956.
- Pythium ultimum Trow
 11123 CBS. 1952.
- Pythium undulatum Petersen
 10952 J.N. Couch, Univ. of North Carolina. 1951.

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Pythium vexans de Bary
12194 CBS. 1955.

Rhizoctonia bataticola: See Macrophomina phaseoli

Rhizoctonia carotae Rader

10866* W.E. Rader, Shell Oil Co., Modesto, Calif. 1948.

Rhizoctonia crocorum (Persoon) DC. (= Helicobasidium purpureum Patouillard)

11070 CBS. 1952.

Rhizoctonia lanuginosa Bernard

11575 CBS. 1954.

Rhizoctonia microsclerotia Matz

10187 J.E. Kotila, strain R-177, USDA. 1946. From rice, India.

Rhizoctonia solani Kühn (= Pellicularia filamentosa Rogers)

6221 Thelma B. Post, USDA. 1937.

10154 J.E. Kotila, strain R-40, USDA. 1946. From alfalfa.

10157 J.E. Kotila, strain R-398, USDA. 1946. From alfalfa.

10159 J.E. Kotila, strain R-276, USDA. 1946. From cabbage.

10163 J.E. Kotila, strain R-93, USDA. 1946. From Melilotus.

10166 J.E. Kotila, strain R-409, USDA. 1946. From Koksaughis.

10170 J.E. Kotila, strain R-216, USDA. 1946. From sugar beet.

J. Agric. Res., 1947, 74, 289.

10176 and 10177 J.E. Kotila, strains R-255 and R-355, USDA. 1946.
From sugar beet.

10182 and 10183 J.E. Kotila, strains R-72 and R-190, USDA. 1946.
From potato.

10184, 10186 and 10192 J.E. Kotila, strains R-198, R-372 and R-401,
USDA. 1946. From sugar beet, potato, and tobacco, respectively.

Rhizopus arrhizus Fischer

11145 H.C. Murray, strain RH 176, Upjohn Co., Kalamazoo, Mich.
1952.

Rhizopus chinensis Saito

1227b (-) A.F. Blakeslee, CIW. 1938.

Rhizopus circinans van Tieghem

1225 (R. reflexus) A.F. Blakeslee, CIW. 1938.

Rhizopus cohnii Berlese and de Toni

8996 and 8999 V.M. Cutter, Jr., strains 143 and 148, Cornell Univ.
1942.

Rhizopus delemar and R. japonicus: See R. oryzae

Rhizopus kazanensis Hanzawa

8998 V.M. Cutter, Jr., strain 147, Cornell Univ. 1942.

Rhizopus nigricans: See R. stolonifer

Rhizopus oryzae Went and Prinsen-Geerligs

4858 (Rhizopus delemar) A.J. Kluyver, Delft, Netherlands. 1932.
Production of pectinase.

8466 (Rhizopus japonicus) NCTC, strain 1905. 1942. Central Lab.,
South Manchurian Railway. Manufacture of soya sauce.

8477 NRRL, strain 1528. 1942. Marie B. Morrow, Univ. of Texas.

9363 NRRL, strain 395. 1947. Production of lactic acid.

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Rhizopus oryzae (Continued)

- 9374 NRRL, strain 1472. 1947. Amylo process for starch conversion.
 10260 NRRL, strain 1526. 1947. Amylo process for starch conversion.
 11886 L. Ajello, CDC. 1954. From clinical meningitis.
 11910 (*Rhizopus acidus*) K. Sato, strain 5404, IFO. 1954.
 12732 NRRL, strain 1526. 1957. Production of fumaric acid.
 12883 NRRL, strain 1891. 1957. Strain Boulard No. 5: Amylo process for starch conversion.

Rhizopus pygmaeus Naoumoff

- 11559* CBS. 1953.

Rhizopus reflexus: See *R. circinans*.

Rhizopus shanghaiensis Yamazaki

- 10329 NRRL, strain 1518. 1948.

Rhizopus thermosus Yamamoto

- 11002 K. Kominami, strain 1207, Nagao Inst., Japan. 1951.

Rhizopus tritici Saito

- 1230 A.F. Blakeslee, CIW. 1937.

Rhizopus stolonifer (Ehrenberg ex Fries) Lind

- 6204 (*R. nigricans*) C. Thom, USDA. 1937.

- 6227a (+) and 6227b (-) A.F. Blakeslee, strains C-25A and C-25B, CIW. 1937.

- 10404 W.H. Weston, Harvard Univ. 1948. Strain Aust. 32, QMRDC 387. Military specifications for fungus resistance tests.

Rhizopus sp.

- 12702 NRRL, strain 2005. 1956. Production of fumaric acid.

Rhodotorula aurantiaca (Saito) Lodder

- 9536 W.J. Robbins, New York Botanical Garden. 1944. Assay of *p*-aminobenzoic acid and molecular thiamine. *Science*, 1944, 100, 85.

- 10655 (*Rhodotorula colostri*) NRRL, strain Y-1584. 1950. CBS.

- 10657 (*Rhodotorula longissima*) NRRL, strain Y-1588. 1950. CBS.

Rhodotorula aurea: See *Cryptococcus laurentii*

Rhodotorula flava (Saito) Lodder

- 10656* NRRL, strain Y-1585. 1950.

Rhodotorula glutinis (Fresenius) Harrison

- 2527* F.W. Tanner, Univ. of Illinois. 1929. CBS.

- 4054 P. Redaelli, Univ. of Pavia, Italy. 1927. NRRL strain Y-842.
 10788 (*Rhodotorula gracilis*) CBS. 1950.

Rhodotorula glutinis var. rubescens (Saito) Lodder

- 6495 J.A. Stevenson, strain 1933, USDA. 1938. R. Scaramella.

Rhodotorula minuta (Saito) Harrison

- 10658* NRRL, strain Y-1589. 1953. CBS.

Rhodotorula mucilaginosa (Jørgensen) Harrison

- 2503 F.W. Tanner, Univ. of Illinois. 1926. NRRL strain Y-168.

- 2510 (*R. mucilaginosa* var. *sanguinea*) F.W. Tanner. 1941. NRRL strain Y-174.

- 4056 (*Torulopsis biourgei*) P. Redaelli, Univ. of Pavia, Italy. 1927.

- 4557 (*Cryptococcus rubrorugosus*) A. Castellani, Ross Inst., London. 1929. NRRL strain Y-843.

FUNGI AND YEASTS

Rhodotorula mucilaginosa (Continued)

4558 (*Cryptococcus pararoseus*) A. Castellani. 1929. NRRL strain Y-844.

Rhodotorula pallida Lodder

2776 NRRL, strain Y-21. 1953. CBS.

Rhodotorula rubra (Demme) Lodder

9449 NRRL, strain Y-1592. 1948. CBS.

9450 and 9451 NRRL, strains Y-1593 and Y-1594. 1948. CBS.
Received as vars. *curvata* and *longa*, respectively.

Rhynchosporium secale (Oudemans) Davis

11610 K. Sato, strain 5290, IFO. 1953.

Rosellinia necatrix (Hartig) Berlese

11806 H. E. Thomas, Univ. of California, Berkeley. 1954. From pear root.

Saccharomyces acidifaciens (Nickerson) Lodder and Kreger-van Rij

2333 and 2602 (*Zygosaccharomyces mandshuricus*) F. W. Tanner, Univ. of Illinois. 1927. NRRL strains Y-125 and Y-54.

8766* W. J. Nickerson, Wheaton Coll., Norton, Mass. 1942. NRRL strain Y-1011.

11486 NRRL, strain Y-1404. 1953. CBS.

Saccharomyces bailii Lindner

8099 G. Knaysi, strain 651, Cornell Univ. 1941.

Saccharomyces bayanus Saccardo

8741 NRRL, strain Y-966. 1942.

Saccharomyces bisporus (Naganishi) Lodder and Kreger-van Rij

2607 (*Zygosaccharomyces bisporus*) F. W. Tanner, Univ. of Illinois. 1927. NRRL strain Y-223.

10618 (*Debaryomyces disporus*) NRRL, strain Y-1447. 1949. CBS.

Saccharomyces carlsbergensis Hansen

2345 F. W. Tanner, Univ. of Illinois. 1928. CBS. NRRL strain Y-132. Production of ergosterol.

2700 F. W. Tanner. 1927. NCTC strain 903, NRRL Y-236. Frohberg bottom yeast.

9080 Hillman Hospital, Birmingham, Ala., strain 4228. 1943. Assay of vitamin B₆ and pantothenic acid.

9373 V. H. Cheldelin, strain 1036, Oregon State Coll. 1947.

10596 NRRL, strain Y-379. 1949.

Saccharomyces cerevisiae Hansen

2338 F. W. Tanner, Univ. of Illinois. 1927. NCTC strain 467, NRRL Y-129.

2341 (*S. ilicis*) F. W. Tanner. 1926. NCTC strain 1809, NRRL Y-35. Carlsberg Lab., from fruit of Ilex.

2359 (*S. ellipsoideus* subsp. *fuliensis* var. *typica*) R. Chodat, strain 50, Univ. of Geneva, Switzerland. 1928. NRRL strain Y-44.

2365 (*S. cerevisiae* subsp. *vetrozensis*) R. Chodat, strain 56. 1928. NRRL strain Y-138.

2366 (*S. pastorianus* subsp. *arbignensis*) R. Chodat, strain 52. 1928. NRRL strain Y-139. Assay of Acti-dione.

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Saccharomyces cerevisiae (Continued)

- 2373 F.W. Tanner, Univ. of Illinois. 1928. NRRL strain Y-144. Acid tolerant.
- 2375 (*S. ellipsoideus* subsp. *montibensis*) R. Chodat, strain 55. 1928. NRRL strain Y-145.
- 2704 F.W. Tanner. 1927. Type Saaz. NCTC strain 906, NRRL Y-239.
- 4110 F.A. McDermott, Eastern Alcohol Corp. 1927. Grain distillery yeast.
- 4111, 4124 and 4125 F.A. McDermott, Eastern Alcohol Corp. 1927. Molasses distillery yeasts.
- 4126 (*S. anamensis*) F.A. McDermott. 1927. CBS. Amylo process yeast; ferments at high temperature.
- 4132 F.A. McDermott. 1927. Molasses distillery yeast with high temperature optimum.
- 4134 (*S. sake*) F.A. McDermott. 1927. Japanese sake yeast.
- 7752 R.J. Williams, Univ. of Texas. 1940. Strain "G.M." (Gebrüder Mayer), NRRL strain Y-973. Assay of biotin, inositol, pantothenic acid and pyridoxine.
- 7754 R.J. Williams, strain F.B. (Fleischmann Bakers' yeast). 1940. NRRL strain Y-977. Assay of biotin.
- 7921 M. Wayman, Univ. of Toronto. 1941. Originally from Fleischmann yeastcake. Differentially ferments glucose and galactose.
- 9017 and 9018 Wallerstein Lab., New York, N.Y., strains 1B (Inst. Gärungsgewerbe) and 48B (Canadian Brewery). 1943. Ale yeasts.
- 9369, 9370 and 9371 V.H. Cheldelin, strains S C, 2504 and Lash-Miller, Oregon State Coll. 1947.
- 9763 NRRL, strain Y-567. 1945. PCI strain M50. Distillery yeast.
- 10274 and 10275 C.C. Lindegren, strains 2326 and 2333, Southern Illinois Univ. 1948.
- 11795 R.F. Light, strain 20.5, Fleischmann Lab., Stamford, Conn. 1954.
- 11909 (*Debaryomyces mandshuricus*) K. Sato, strain 0044, IFO. 1954.
- 12341 H.P. Klein, strain LK 2 G 12, Brandeis Univ. 1955. Fat synthesis.
- 12699 T.E. King, strain HI, Oregon State Coll. 1956.

Saccharomyces cerevisiae var. *ellipsoideus* (Hansen) Dekker

- 560 and 561 Wallerstein Lab., New York, N.Y., strains 82 and 50. 1925. NRRL strains Y-635 and Y-629.
- 834 F.W. Tanner, Univ. of Illinois. 1926. Champagne yeast.
- 2355 (*S. cerevisiae* var. *turbidans*) F.W. Tanner, strain 2355. 1925.
- 2364 (*S. cerevisiae* subsp. *orsati*) R. Chodat, strain 54, Univ. of Geneva, Switzerland. 1928.
- 2701 F.W. Tanner. 1928. Johannesburg II yeast. NCTC strain 1806, NRRL Y-237.
- 4097 F.A. McDermott, Eastern Alcohol Corp. 1927. French champagne yeast.

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Saccharomyces cerevisiae var. ellipsoideus (Continued)

- 4098 and 4105 F.A. McDermott. 1927. German white wine yeast and California wine yeast.
- 4108 NRRL, strain Y-633. 1954. Tokay wine yeast.
- 4113 and 4114 F.A. McDermott, Eastern Alcohol Corp. 1927. Ansmushausen and Laviero wine yeasts. NRRL strains Y-149 and Y-150.
- 4117, 4123 and 4127 F.A. McDermott. 1927. Menes and Burgundy wine yeasts, and "wild" yeast from American Concord grapes.
- 4921 F.W. Fabian, Michigan State Coll. 1934. French wine yeast.
- 6037 (*S. cerevisiae* var. *turbidans*) CBS. 1936.
- 7753 R.J. Williams, Univ. of Texas. 1940. "Old Process" yeast; assay of thiamine and inositol.
- 8255, 8256, 8257 and 8258 C.S. Pederson, strains 249 (Sauterne), 303 (Muscatel), 313 (Sauterne) and 331 (Malaga), New York Agric. Expt. Sta., Geneva, N.Y. 1941.
- 9841 NCTC, strain 6969 (Pasteur). 1945. Sauterne wine yeast.
- 9896 K. Dittmer, Univ. of Colorado. 1945. Strain Fleischmann 139. Assay of biotin.
- 10607 (*S. odessa*) NRRL, strain Y-1355. 1949.
- 10608 (*S. paradoxus*) NRRL, strain Y-1088. 1949.
- 10824 H.J. Bunker, Barclay Perkins and Co., London. 1950. NCTC strain 7040.
- 11777 NRRL, strain Y-1912. A.G. Lochhead. Rhenish wine yeast.

Saccharomyces chevalieri Guilliermond

- 9804* NCTC, strain 2054. 1945.
- 10604 (*S. mangini*) NRRL, strain Y-1546. 1949. CBS.

Saccharomyces delbrueckii Lindner

- 10597 (*S. dairensis*) NRRL, strain Y-1353. 1949.
- 10612 (*S. unisporus*) NRRL, strain Y-1556. 1953.
- 10662 NRRL, strain Y-866. 1953.

Saccharomyces delbrueckii var. mongolicus (Saito) Lodder and Kreger-van Rij.

- 9770 P.R. Burkholder, strain 259, Yale Univ. 1945.
- 10600 (*S. globosus*) NRRL, strain Y-409. 1949.
- 10686* NRRL, strain Y-1602. 1953. CBS.

Saccharomyces elongasporus Recca and Mrak

- 11503* J.A. Recca, strain 78, Univ. of California, Davis. 1953. From concentrated orange juice. *Food Technol.*, 1952, 6, 450.

Saccharomyces exiguum Hansen (*Torulopsis holmii*)

- 10599 NRRL, strain Y-1538. 1954. CBS.

Saccharomyces fermentati (Saito) Lodder and Kreger-van Rij (*Torulopsis colliculosa*)

- 2551* F.W. Tanner, Univ. of Illinois. 1924. K. Saito, Central Lab. South Manchurian Railway. NRRL strain Y-856.

Saccharomyces fragilis Jørgensen (*Candida pseudotropicalis*)

- 8582 and 8601 N.C. Laffer, strains 49 and 78 (Type E), Lederle Lab., Pearl River, N.Y. 1942. NRRL strains Y-1137 and Y-1156. Also numerous other Type E strains from the same source.

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Saccharomyces fragilis (Continued)

- 8608 and 8616 N.C. Laffer, strains 85 and 93 (Type F). 1942.
 NRRL strains Y-1163 and Y-1171.
 8635 Upjohn Co., Kalamazoo, Mich. 1954. W. Henneberg, strain 236. NRRL strain Y-1190. Assay of Acti-dione.
 12424 NRRL, strain Y-610. 1956. W.D. Stovall strain 21041. Homothallic, also hybridizes with *S. lactis*, NRRL strains Y-1140 and Y-1205. *J. Bact.*, 1956, 71, 290.

Saccharomyces heterogenicus Osterwalder

- 10601* NRRL, strain Y-1354. 1949. CBS.

Saccharomyces lactis Dombrowski (*Torulopsis sphaerica*)

- 2628 (*Zygosaccharomyces versicolor*) NRRL, strain Y-62. 1946.
 8563 and 8583 N.C. Laffer, strains 26 and 56 (Type C), Lederle Lab., Pearl River, N.Y. 1942. NRRL strains Y-1118 and Y-1138. Opposite mating type from 8585.
 8585 and 8599 N.C. Laffer, strains 61 and 76 (Type C). 1942.
 NRRL strains Y-1140 and Y-1154. Opposite mating type from 8651. *J. Bact.*, 1952, 63, 449.

- 8629 and 8630 N.C. Laffer, strains 122 and 123 (Type D). 1942.
 NRRL strains Y-1184 and Y-1185.

- 8651 N.C. Laffer, strain 151. 1942. CBS. NRRL strain Y-1205.
J. Bact., 1952, 63, 449.

- 10689 (*Zygosaccharomyces casei*) NRRL, strain Y-1564. 1953.

- 12425 NRRL, strain Y-1114. 1956. Opposite mating type from 8585.
 12426 NRRL, strain Y-1193. 1956. Homothallic.

Saccharomyces lactis (NRRL Y-1205) x *S. marxianus*

(*Zygosaccharomyces ashbyi*, NRRL Y-1598)

- 12709 L.J. Wickerham, strain (11). USDA, Peoria, Illinois. 1957.
 Homothallic.
 12710 L.J. Wickerham, strain (24). 1957. Heterothallic; mates with 8585.

Saccharomyces logos van Laer and Denamur ex Jörgensen

(= *S. brasiliensis* Lindner)

- 10603 NRRL, strain Y-671. 1950. Joseph E. Seagram and Sons., Inc. strain 52.

Saccharomyces marxianus Hansen

- 2343 F.W. Tanner, strain 2343, Univ. of Illinois. 1926. NRRL strain Y-37.

- 10606 NRRL, strain Y-1550. 1953. CBS.

- 12708 (*Zygosaccharomyces ashbyi*) NRRL, strain Y-1598. 1957.

Saccharomyces mellis (Fabian and Quinet) Lodder and Kreger-van Rij

- 2625 NRRL, strain Y-61. 1946. Received as *Zygosaccharomyces ravennatus*.

- 2629 NRRL, strain Y-63. 1946. Received as *Z. perspicillatus*.

- 8381 (*Zygosaccharomyces richteri*) A.G. Lochhead, strain M1, Canada Dept. Agric., Ottawa. 1942. From fermented honey.

- 8382 (*Zygosaccharomyces nectarophilus*) A.G. Lochhead, strain N4. 1942. From floral nectar.

- 10685 NRRL, strain Y-1601. 1950. CBS.

- 12572 J.F.T. Spencer, strain P3a, National Research Council, Canada. 1956. Production of polyhydric alcohols.

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- Saccharomyces microellipodes Osterwalder
 10605* NRRL, strain Y-1549. 1950. CBS.
- Saccharomyces oviformis Osterwalder
 9769 P.R. Burkholder, strain 233, Yale Univ. 1945.
- Saccharomyces pastori (Guilliermond) Lodder and Kreger-van Rij
 2604 F.W. Tanner, Univ. of Illinois. 1927. NRRL strain Y-55.
 9671 E.C. Holst, USDA. 1945. Received as *Zygosaccharomyces pini*.
- Saccharomyces pastorianus Hansen
 12752* NRRL, strain Y-1551. 1957. CBS.
- Saccharomyces rosei (Guilliermond) Lodder and Kreger-van Rij
 (Torulopsis stellata var. cambresieri)
 10664 NRRL, strain Y-1567, 1950. CBS.
 10744 (*Zygosaccharomyces globiformis*) O.B. Williams, Univ. of Texas. 1949.
- Saccharomyces rouxii Boultroux
 2615 (*Zygosaccharomyces gracilis*) NRRL, strain Y-225. 1946.
 Differentially ferments sucrose and glucose.
 2619 (*Z. variabilis*) NRRL, strain Y-228. 1946.
 2623 (*Z. gracilis* var. *italicus*) NRRL, strain Y-229. 1946.
 8383 (*Z. rugosus*) A.G. Lochhead, strain 139, Canada Dept. Agric., Ottawa. 1942.
 10383 (*Z. major*) NRRL, strain Y-1561. 1948. CBS.
 10687 (*Z. vini*) NRRL, strain Y-1563. 1953.
 11069 (*Z. japonicus* var. *soya*) CBS. 1951.
 12573 J.F.T. Spencer, strain H3C, National Research Council, Canada. 1956. Production of polyhydric alcohols.
- Saccharomyces rouxii var. polymorphus (Kroemer and Krumbholz)
 Lodder and Kreger-van Rij
 2606 F.W. Tanner, Univ. of Illinois. 1927. NCTC strain 813, NRRL Y-222. Received as *Zygosaccharomyces barkeri*.
 2610 and 2612 NRRL, strains Y-57 and Y-224. 1946. Received as *Zygosaccharomyces salsus* var. *saccharosum*.
 2624 NRRL, strain Y-1022. 1946. A.G. Lochhead strain Z-2.
 10682 (*Zygosaccharomyces citrus*) NRRL, strain Y-1600. 1946. CBS.
- Saccharomyces steineri Lodder and Kreger-van Rij
 2367* R. Chodat, strain 53, Univ. of Geneva, Switzerland. 1928.
 NRRL strain Y-140.
- Saccharomyces uvarum Beijerinck
 9771 P.R. Burkholder, strain 262, Yale Univ. 1945.
 10609 NRRL, strain Y-672. 1949. NCTC strain 468, Seagram strain 53.
 10613 NRRL, strain Y-969. 1953.
- Saccharomyces willianus Saccardo
 2329 (*S. intermedius*) F.W. Tanner, Univ. of Illinois. 1927. CBS.
 2360 H.C. Lichtstein, Univ. of Tennessee. 1951. NCTC strain 905. Assay of beta-alanine. J. Bact., 1949, 58, 215.
 Received as *S. fragilis*.
 9803 (*S. validus*) NCTC, strain 470. 1945.
 10598 (*S. elongatus*) NRRL, strain Y-1537. 1949. CBS.
 10611 (*S. tubiformis*) NRRL, strain Y-1555. CBS.

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Saccharomyces willianus (Continued)

- 10614 (*S. validus*) NRRL, strain Y-830. 1952.
10615 NRRL, strain Y-1566. 1949. CBS.

Saccharomyces spp.

- 562 Wallerstein Lab., New York, strain 77. 1925. Tokay wine yeast.
764 and 765 U.S. Forest Products Lab., Madison, Wis., strains Hungarian beer yeast and Wallerstein Lab. 53. 1926. Fermentation of waste sulfite liquor; acid tolerant.
894 F.W. Tanner, Univ. of Illinois. 1926. Burgundy wine yeast.
918 Hacienda El Potrero, Inc., Vera Cruz, Mexico. 1926. Production of alcohol from molasses.
2358 F.W. Tanner, Univ. of Illinois. 1928. NRRL strain Y-43. From "California bees."
2632 F.W. Tanner. 1926. From oysters.
4905 H.E. Goresline, USDA. 1933. Fermentation of orange juice.
4938 H.E. Goresline, USDA. 1934. NRRL strain Y-163. "Steinberg" strain, a cider yeast.
10736 J.B. Tomasello, strain Riesling A-L, Hammonton, N.J. 1949.
11428 K. Sato, strain 533, IFO. 1953. Kwass yeast.

Saccharomyces ludwigii Hansen

- 11313 CBS. 1952.

Saksenaea vasiformis Saksena

- 11963* NRRL, strain A-5862. 1954. Mycologia, 1953, 45, 426.

Saprolegnia dioica de Bary

- 10395 CBS. 1948.

Saprolegnia ferax (Gruithuisen) Thuret

- 10396 CBS. 1948.

Saprolegnia parasitica Coker

- 11393 CBS. 1952.

Sarcinomyces crustaceus Lindner

- 11717 K. Sato, strain 4875, IFO. 1954.

Schizobastosporion starkeyi-henricii Ciferri

- 4673 R. Ciferri, Dept. of Agric., Dominican Republic. 1930. NRRL strain Y-853.

Schizophyllum commune Fries

- 9148 J.W. Sinden, strain Overholts 24782-R, Pennsylvania State Coll. 1947.

- 12671 J.R. Raper, strain "Blue 130," Harvard Univ. 1956.

Schizosaccharomyces octosporus Beijerinck

- 2479 F.W. Tanner, Univ. of Illinois. 1927. NCTC strain 382, NRRL Y-854.

- 4206 CBS. 1927. NRRL strain Y-855.

Schizosaccharomyces pombe Lindner

- 2476 F.W. Tanner, Univ. of Illinois. 1927. CBS. NRRL strain Y-164.

- 2478 F.W. Tanner, 1926. NRRL strain Y-9.

- 4133 (*S. liquefaciens*) F.A. McDermott, Eastern Alcohol Corp. 1927. CBS. Osterwalder's "sulfur resistant" yeast.

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- Schizosaccharomyces versatilis Wickerham and Duprat
 9987* NRRL, strain Y-1026. 1946. J. Bact., 1945, 50, 597.
 10660 (*S. japonicus*) NRRL, strain Y-1361. 1946. CBS.
- Schizothecium longicolle Ames
 11222* L. M. Ames, ERDC. 1952.
- Schwanniomyces occidentalis Klöcker
 2320 NRRL, strain Y-121. 1943.
 2322* NRRL, strain Y-10. 1943.
- Sclerotinia camelliae Hara
 10906 Alice J. Watson, strain M-154, USDA. 1951.
- Sclerotinia fructicola (Winter) Rehm
 9684 J. A. Roberts, USDA. 1945.
 9954 G. W. Keitt, Univ. of Wisconsin. 1946.
 9962 W. B. Hewitt, Univ. of California, Davis. 1946. From peach fruit.
- Sclerotinia fructigena Aderhold and Ruhland
 11790 F. Beran, Bundesanst. Pflanzenschutz, Vienna. 1954.
- Sclerotinia gladioli (Massey) Drayton
 6494 J. A. Stevenson, strain 1923, USDA. 1938. L. M. Massey.
- Sclerotinia homoeocarpa Bennett
 10942, 10943 and 10944 CBS. 1951. Received as ascigerous, intermediate and perfect isolates, respectively.
- Sclerotinia laxa (Ehrenberg) Aderhold and Ruhland
 9953 G. W. Keitt, Univ. of Wisconsin. 1946.
 9961 W. B. Hewitt, Univ. of California, Davis. 1946. From apricot twig.
- Sclerotinia minor Jagger
 11791 F. Beran, Bundesanst. Pflanzenschutz, Vienna. 1954.
- Sclerotinia sclerotiorum (Libert) de Bary
 10939 and 10940 W. F. Jeffers, Univ. of Maryland. 1951. From lima bean and daisy, respectively.
- Sclerotinia trifoliorum Eriksson
 11792 F. Beran, Bundesanst. Pflanzenschutz, Vienna. 1954.
- Sclerotium bataticola: See *Macrophomina phaseoli*
- Sclerotium cepivorum Berkeley
 11793 F. Beran, Bundesanst. Pflanzenschutz, Vienna. 1954.
- Sclerotium rolfsii Saccardo: See also *Corticium centrifugum*
 11940 W. F. Jeffers, Univ. of Maryland. 1954. From bulbous iris in Oregon. Large sclerotial form, reported as *S. delphinii*.
 12450 W. D. McClellan, USDA. 1956. From bulbous iris in Maryland. Small sclerotial form.
- Scopulariopsis brevicaulis (Saccardo) Bainier
 7903 C. Thom, strain 480-2, USDA. 1940. NRRL strain 1096.
 7123 CBS. 1938. Received as *Malassezia tropica*.
- Sepedonium chrysosperum Bulliard ex Fries (= *Hypomyces chrysospermus* Tulasne)
 11243 QMRDC, strain 1055. 1953.
- Septomyxa affinis (Sherbakoff) Wollenweber
 6737 J. E. Machacek, Canada Dept. Agric., Winnipeg. 1938.
- Septoria avenae Frank
 12277 A. L. Hooker, strain O-424-A, Univ. of Wisconsin. 1955.

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- Septoria gladioli Passerini
6392 J.G. Hararr, Virginia Polytech. Inst., Blacksburg. 1938.
- Septoria lycopersici Spegazzini
10810 C.F. Andrus, strain 376, USDA, Charleston, S.C. 1950.
10814 G.B. Cummins, strain 696, Purdue Univ. 1951.
- Septoria macropoda Passerini var. septulata (Gonzalez Fragoso) Sprague
7723 J.A. Stevenson, strain S 118, USDA. 1940. R. Sprague.
- Septoria nodorum Berkeley
6738 CBS. 1953.
- Septoria phyllachoroides Passerini
7730 J.A. Stevenson, strain S 234, USDA. 1940. R. Sprague.
- Sordaria destruens (Shear) Hawker
12419 CMI, strain 44227. 1955.
- Sordaria fimicola (Roberge) Cesati and DeNotaris
6739 J.E. Machacek, Canada Dept. Agric., Winnipeg. 1938.
9985 NRRL, strain 1558. 1946.
- Spegazzinia tessartha (Berkeley and Curtis) Saccardo
11964 W.F. Jeffers, Univ. of Maryland. 1954. QMRDC strain 371e.
- Sphaceloma hederae Bitancourt and Jenkins
11183 Anna E. Jenkins, strain 620-E, USDA. 1951. From English ivy, California.
- Sphaceloma perseae Jenkins
11190 Anna E. Jenkins, strain 707, USDA. 1951. From avocado, Mexico.
- Sphaceloma populi (Saccardo) Jenkins
11181 Anna E. Jenkins, strain 227 Ca, USDA. 1951.
- Sphaceloma rhois Bitancourt and Jenkins
11194 Anna E. Jenkins, strain 118d, USDA. 1951.
- Sphaceloma sp.
11354 Anna E. Jenkins, strain T2, USDA. 1952. From Camellia sinensis.
- Sphacelotheca cruenta (Kühn) Potter
12649 C.W. Blackmon, N.E. Louisiana State Coll. 1956.
- Sphaerostilbe aurantiicola (Berkeley and Broome) Petch
9558 E.S. Luttrell, strain 76, Georgia Agric. Expt. Sta. 1944.
- Spicaria violacea Abbott
10525* NRRL, strain 901. 1948. E.V. Abbott.
- Spicularia terrestris Timonin
10095* M. Timonin, strain 1121, Canada Dept. of Agric., Ottawa. 1946. Canadian J. Res., 1940, 18, 307.
- Spondylocladium atrovirens Harz
10846 Lillian Cash, USDA. 1951.
10902 R. Bonde, Maine Agric. Expt. Sta. 1951.
- Sporidiobolus johnsonii Nyland
10705* G. Nyland, Univ. of California, Davis. 1950. Mycologia, 1949, 41, 686.
- Sporobolomyces pararoseus Olson and Hammer
11386 (S. shibatanus) K. Sato, strain 376, IFO. 1952.
- Sporobolomyces salmonicolor (Fischer and Brebeck) Kluyver and van Niel
623 A.J. Kluyver, Techn. Univ., Delft. 1926.
- Sporodinia grandis: See Syzygites megalocarpus

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- Sporotrichum anglicum: See Endomycopsis chodati
- Sporotrichum bombycinum (Corda) Rabenhorst
7139 CBS. 1938.
- Sporotrichum carnis: See Aleurisma carnis
- Sporotrichum carougeau Langeron
11262 (Oospora variabilis) CBS. 1952. Strain Castelli.
- Sporotrichum cerebriforme de Vries
12124 CBS. 1955.
- Sporotrichum epigaeum Brunaud
7145 CBS. 1938.
- Sporotrichum gougeroti Matruchot
10986 Rhoda Benham, strain 1012, Columbia Univ. 1951.
- Sporotrichum parvulum Brunhardt
7153 CBS. 1938.
- Sporotrichum schenckii Hektoen and Perkins
6243 T. Benedek, Northwestern Univ. 1938.
7158 CBS. 1938.
7968 J.S. D'Antoni, strain 105, Tulane Univ. 1941.
8307 R. M. Pike, Bassett Hospital, Cooperstown, N. Y. 1941.
9523 O. Felsenfeld, Chicago Medical School. 1944.
10212 and 10213 C. W. Emmons, strains 7019 and 7020, NIH. 1947.
10268 A.E. de Arêa Leão, strain 2066, IOC. 1947.
- Sporotrichum sulfurescens van Beyma
7159 CBS. 1938.
- Stachybotrys atra Corda
9182 G.A. Greathouse, strain 1331.2, USDA. 1943. QMRDC
strain 1274, NRRL 1877. For testing mildew proofing.
10695 QMRDC, strain 94d, 1953. Cellulose and wool decomposition.
- Stachybotrys lobulata Berkeley
7436 J.A. Stevenson, USDA. 1939.
11716 K. Sato, strain 5369, IFO. 1954.
- Stemphylium loti Graham
11718* J.H. Graham, strain 339, USDA, State Coll., Pa. 1954.
Phytopath., 1953, 43, 578.
- Stemphylium radicum (Meier, Drechsler and Eddy) Neergaard
6503 J.A. Stevenson, strain 5350, USDA. 1938.
- Stemphylium sarciniforme (Cavara) Wiltshire
10820 Helen Sherwin, strain 2906, USDA. 1950.
10828 (Macrosporium sarcinaeforme) G.L. McKnew, Boyce
Thompson Inst., Yonkers, N.Y. 1950. J.G. Horsfall.
- Stemphylium solani Weber
11128 C.F. Andrus, strain 319B-2, USDA, Charleston, S.C. 1952.
- Stemphylium sp.
9569 P.B. Marsh, strain 1203.1, USDA. 1944. For testing mildew
proofing.
- Stereum fasciatum (Schweinitz) Fries
9398 and 9425 J.W. Sinden, Overholts strains 24688-R and 24689-R,
Pennsylvania State Coll. 1947.
- Stereum frustulatum (Persoon ex Fries) Fuckel
12682 (S. frustulosum) Frances F. Lombard, strain F.P. 56461-R,
USDA. 1956.

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- Stereum gausapatum Fries
9396 J. W. Sinden, Overholts strain 24702-R, Pennsylvania State Coll. 1947.
- Stereum purpureum (Persoon) Fries
12283 Frances F. Lombard, strain R-167, USDA. 1955. D.S. Welch.
- Stereum rameale Schweinitz
9397 J. W. Sinden, Overholts strain 24673-R, Pennsylvania State Coll. 1947.
- Stereum sanguinolentum Albertini and Schweinitz ex Fries
12233 Frances F. Lombard, strain Flo. 457-A, USDA. 1955. From balsam fir.
- Stereum subpileatum Berkeley and Curtis
10938 W.F. Jeffers, Univ. of Maryland. 1951. R.W. Davidson.
- Stysanus stemonitis (Persoon) Corda
11259 CBS, strain Boedijn-Reitsma. 1952.
- Syncephalastrum fuliginosus Bainier
8981 V.M. Cutter, Jr., strain 149, Cornell Univ. 1942.
- Syncephalastrum nigricans Vuillemin
12266 L.W. Durrell, Colorado A. and M. Coll., Fort Collins. 1955.
- Syncephalastrum racemosum (Cohn) Schroeter
1332b (-) A.F. Blakeslee, CIW. 1938.
7854a (+) and 7859b (-) A.F. Blakeslee. 1940.
- Syncephalastrum sp.
7938 V.M. Cutter, Jr., strain 62, Cornell Univ. 1941.
- Syncephalis nodosa van Tieghem
7943 V.M. Cutter, Jr., strain 67, Cornell Univ. 1941.
- Syzygites megalocarpus Ehrenberg ex Fries
11807 (Sporodinia grandis) NRRL, strain 2406. 1954.
- Taphrina deformans (Fuckel) Tulasne
11124 CBS. 1952. From peach.
- Taphrina letifera (Peck) Saccardo
11691 A.J. Mix, strain 792, Univ. of Kansas. 1953. From Acer spicatum.
- Taphrina robinsoniae Giesenhagen
11693 A.J. Mix, strain 803, Univ. of Kansas. 1953. From Alnus rugosa.
- Thamnidium elegans Link
8997 V.M. Cutter, Jr., strain 114, Cornell Univ. 1942.
11808 NRRL, strain 1613. 1954.
11878 CMI, strain 21945. 1954. F.T. Brooks, from meat. NCTC strain 1127.
11882 CBS. 1954.
- Thielavia sepedonium Emmons
9787* NRRL, strain 1697. 1945. C.W. Emmons.
11814 W.W. Diehl, USDA. 1945.
- Thielavia terricola Emmons
11769 P.B. Marsh, strain 46, USDA. 1954.

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- Thielaviopsis basicola (Berkeley and Broome) Ferraris
9109 J.A. Stevenson, USDA. 1943. E.E. Clayton, from tobacco roots.
- 9853 J.A. Stevenson, USDA. 1945. From New Zealand.
- Thraustotheca clavata (de Bary) Humphrey
10948 John N. Couch, Univ. of North Carolina. 1951.
- Tieghemella italicica and T. orchidis: See Absidia
- Tilletiopsis minor Nyland
10764* G. Nyland, Univ. of California, Davis. 1950. Mycologia, 1950, 42, 487.
- Torula: See also Candida, Gliomastix, Pullularia, Rhodotorula, and Torulopsis
- Torula tremoris: See Candida pseudotropicalis
- Torula dematia Berkhoult
8462 NCTC, strain 4526. 1942. CBS.
- Torulopsis aeria (Saito) Lodder
10665* NRRL, strain Y-1399. 1948. CBS.
- Torulopsis albida: See Cryptococcus albidus
- Torulopsis bacillaris (Kroemer and Krumbholz) Lodder
10667 NRRL, strain Y-1444. 1953.
- Torulopsis candida (Saito) Lodder
2560 NRRL, strain Y-211. 1948.
- Torulopsis citrus Recca and Mrak
11504* J.A. Recca, strain 207, Univ. of California, Davis. 1953. Food Technol., 1952, 6, 450.
- Torulopsis colliculosa (Hartmann) Saccardo
2507 F.W. Tanner, Univ. of Illinois. 1926. CBS. NRRL strain Y-172.
- Torulopsis dattila (Kluyver) Lodder
10691 NRRL, strain Y-1289. 1949. E.M. Mrak, strain 185.
- Torulopsis famata (Harrison) Lodder and Kreger-van Rij
12790 NRRL, strain Y-548. 1957.
- Torulopsis flavescens: See Cryptococcus laurentii var. flavescens
- Torulopsis glabrata (Anderson) Lodder and DeVries
2001* NRRL, strain Y-65. 1957. H.W. Anderson, Univ. of Illinois.
- Torulopsis gropengiesseri (Harrison) Lodder
10669* NRRL, strain Y-1445. 1953. CBS.
- Torulopsis holmii (Jörgensen) Lodder
10670 NRRL, strain Y-1507. 1956. CBS.
- Torulopsis kefyri: See Candida pseudotropicalis var. lactosa
- Torulopsis laurentii: See Cryptococcus laurentii
- Torulopsis lipofera: See Lipomyces lipoferus
- Torulopsis luteola: See Cryptococcus luteolus
- Torulopsis rotundata: See Cryptococcus diffluens
- Torulopsis sphaerica (Hammer and Cordes) Lodder: See also Saccharomyces lactis
2504* F.W. Tanner, Univ. of Illinois. 1928. B.W. Hammer and W.A. Cordes, Univ. of Iowa. NRRL strain Y-1098.
- 8625 N.C. Laffer, strain 110, Lederle Lab., Pearl River, N.Y. 1942. NRRL strain Y-1180.

FUNGI AND YEASTS

Torulopsis sphaerica (Continued)

- 8549, 8606 and 8632 N.C. Laffer, strains 10, 83 and 125 (Type A).
1942. NRRL strains Y-1104, Y-1161 and Y-1187. From
domestic (U.S.A.) sources. Also numerous additional strains.
8637, 8647 and 8652 N.C. Laffer, strains 132, 146 and 162 (Type A).
1942. NRRL strains Y-1192, Y-1202 and Y-1206. From
European sources.

Torulopsis stellata (Kroemer and Krumbholz) Lodder

- 10673 NRRL, strain Y-1446. 1955. CBS.

Torulopsis utilis: See Candida utilis

Torulopsis uvae: See Candida zeylanoides

Trametes serialis Fries

- 11751 Frances F. Lombard, strain Colo. 51-126, USDA. 1954.

Trametes suaveolens Linnaeus ex Fries

- 9417 J.W. Sinden, Overholts strain 24777-S, Pennsylvania State
Coll. 1947.

Tricellula curvatis Haskins

- 11837 M.A. Gordon, strain F-24, CDC. 1954.

Trichoderma viride Persoon ex Fries See also hypocrea rufa

- 8678 (Trichoderma lignorum) NRRL, strain 1762. 1942.

- 8751 J.E. Machacek, Canada Dept. Agric., Winnipeg. 1942.

- 10043, 10044, 10045 and 10046 NCTC, strains 7057, 7056, 7055 and
7058. 1946. Production of viridin.

Trichodérma sp.

- 9645 W.H. Weston, strain T-1, Harvard Univ. 1944. Military
specifications for fungus resistance testing.

- 12668 P.F. Klens, strain 609, Nuodex Products Co., Elizabeth,
N.J. 1956. From industrial pipe insulation; for fungus
resistance testing.

Trichophyton balcanicum Castellani

- 763 A. Castellani, Inst. Med. Trop., Lisbon. 1954.

Trichophyton batonrougei Castellani

- 11898 A. Castellani, Inst. Med. Trop., Lisbon. 1954.

Trichophyton concentricum Blanchard

- 761 (Endodermophyton concentricum) A. Castellani, Inst. Med.
Trop., Lisbon. 1954.

- 9358 N.F. Conant, Duke Univ., Durham, N.C. 1947. From tinea
imbricata

Trichophyton equinum (Matruchot and Dansonville) Gedoelst

- 12544, 12545, 12546 and 12547 Lucille K. Georg, strains B-56, B-57,
B-58 and B-59, CDC. 1956.

Trichophyton faviforme: See T. verrucosum

Trichophyton ferrugineum (Ota) Langeron and Milochevitch

- 10809 Lucille K. Georg, strain A-360, CDC. 1950. J.E. Mackinnon.
IHM.

- 11992 K. Sato, strain 5832, IFO. 1954.

Trichophyton gallinae (Megnin) Blanchard

- 11094 and 12108 Lucille K. Georg, strains A-7 and A-929, CDC. 1955.

Trichophyton megnini Blanchard

- 7214 (T. vinosum) CBS. 1938.

- 11093 Lucille K. Georg, strain A-302, CDC. 1951.

FUNGI AND YEASTS

Trichophyton megnini (Continued)

12106 and 12107 Lucille K. Georg, strains 424 and A-617. 1955.
Require histidine.

Trichophyton mentagrophytes (Robin) Blanchard

4807 and 4808 F.D. Weidman, Univ. of Pennsylvania. 1932. From tinea pedis.

7201 (T. persicolor) CBS. 1938.

8125 E. Muskatblitt, New York, N.Y. 1941. From tinea barbae.

8294 F.D. Weidman, strain 4011, Univ. of Pennsylvania. 1941.

8757 and 8758 (T. gypseum asteroides) C.W. Emmons, strains 607 and 582, NIH. 1942.

9129 and 9533 (T. interdigitale) C.W. Emmons, strains 598 and 640. 1944. From tinea pedis. For germicide testing.

9972 (T. gypseum) C.W. Emmons, strain 666. 1946. From ring-worm of dog. For germicide testing.

10270 and 10271 A.E. de Arêa Leão, strains 2415 and 2417, IOC. 1947. From tinea capitis.

11480 and 11481 (T. quinckeum) C.W. Emmons, strains 679 and 680, NIH. 1953. From dermatophytosis of cat and man.

Trichophyton rotundum da Fonseca

7209 CBS. 1938.

Trichophyton rubrum (Castellani) Sabouraud

10218 C.W. Emmons, strain 671, NIH. 1947. From onychomycosis.

10272 A.E. de Arêa Leão, strain 2419, IOC. 1947.

10789 C.W. Emmons, strain 674, NIH. 1950.

11900 and 11990 A. Castellani, strains 1 and 2, Inst. Med. Trop., Lisbon. 1954.

Trichophyton schoenleinii (Lebert) Langeron and Milochevitch

4822 F.D. Weidman, Univ. of Pennsylvania. 1932. From favus.

10397 CBS. 1948.

11682 and 11683 Lucille K. Georg, strains A-726 and A-727, CDC. 1953.

Trichophyton soudanense Joyeux

11723 J.L. Wood, strain D-96, Johns Hopkins Univ. Hospital, Baltimore. 1954.

Trichophyton sulfureum: See T. tonsurans

Trichophyton tonsurans Malmsten

9194 and 9196 C.W. Emmons, strains 643 and 641, NIH. 1943.

9292 (T. sabouraudi) C.W. Emmons, strain 525. 1944.

10217 C.W. Emmons, strain 662. 1947. From tinea capitis.

10220 (T. sulfureum) C.W. Emmons, strain 651. 1947. From tinea capitis.

Trichophyton verrucosum Bodin var. album (Sabouraud) Georg

10694 (T. faviforme) Lucille K. Georg, strain A-8, CDC. 1953.
From favus.

Trichophyton verrucosum Bodin var. discoides (Sabouraud) Georg

10695 Lucille K. Georg, strain A-9. 1951.

Trichophyton verrucosum Bodin var. ochraceum (Sabouraud) Georg

10696 Lucille K. Georg, strain A-10. 1951.

Trichophyton violaceum Sabouraud

8376 C.W. Emmons, strain 628, NIH. 1942.

FUNGI AND YEASTS

Trichophyton violaceum (Continued)

11902 A. Castellani, Inst. Med. Trop., Lisbon. 1954.

Trichosporium cerealis (Thuem) Saccardo

6727 (Oidiodendron nigrum) J. E. Machacek, Canada Dept. Agric.,
Winnipeg. 1938.

Trichosporon capitatum Diddens and Lodder

10663 NRRL, strain Y-1487. 1951. CBS.

Trichosporon cutaneum (de Beurm et al.) Ota

757 (Oidium rotundatum) A. Castellani, Tulane Univ., New
Orleans. 1926.

4155 (Parendomyces asteroides) F. D. Weidman, Univ. of
Pennsylvania. 1927. M. Ota, strain D.R. 1670.

Trichosporon fermentans Diddens and Lodder

10675* NRRL, strain Y-1492. 1951. CBS.

Trichosporon margaritiferum (Staatz) Buchwald

10676* NRRL, strain Y-1519. 1956. CBS.

Trichosporon pullulans (Lindner) Diddens and Lodder

9331 NRRL, strain Y-1485. 1947.

10677 NRRL, strain Y-1522. 1951.

Trichosporon sericeum Diddens and Lodder

10678 NRRL, strain Y-1523. 1956.

Trichosporon spp.

4151 C. H. Drake, Washington State Coll., Pullman. 1955. M. Ota,
strain D.R. 1665. Received as *T. malassezi*, a doubtful name.

10266 A. E. de Arêa Leão, strain 2037, IOC. 1947. Received as
T. giganteum, a doubtful name.

10267 A. E. de Arêa Leão, strain 2041, IOC. 1947. Received as
T. beigelii, a doubtful name.

Trichothecium roseum Link ex Fries

8685 (Cephalothecium roseum) NRRL, strain 1665. 1942.

12519 R. W. Thoma, strain 1639, Squibb Inst. Med. Res., New
Brunswick, N.J. 1956.

12543 Chas. Pfizer and Co., Inc., Brooklyn, N.Y., strain 961-48N.
1956. U.S. Patent 2,765,258.

Trigonopsis variabilis Schachner

10679* NRRL, strain Y-1579. 1954. CBS.

Tritirachium purpureum (Saito) van Beyma

11385 K. Sato, strain 4844, IFO. 1952.

Tuber melanosporum Vittadini

11343 W. F. Jeffers, Univ. of Maryland. 1952. T. E. Ayers, USDA.

Typhula itoana Imai

11860 CBS. 1954. Japan.

Umbellomyces tetrasporus Saito

11387 K. Sato, strain 5464, IFO. 1952

Urnula craterium (Schweinitz) Fries (Strumella coryneoidia)

11067 Frances Lombard, strain 94444-B, USDA. 1951.

Ustilago avenae (Persoon) Rostrup

10056 C. S. Holton, strain 129-4, USDA, Pullman Washington, 1946.

FUNGI AND YEASTS

Ustilago koller Wille (U. *levis*)

10057 C.S. Holton, strain 65-3, USDA. Pullman, Washington. 1946.
Mutant from buff smut of oats.

Ustilago maydis (DeCandolle) Corda (U. *zeae*)

10817, 10818 and 10819 E.C. Stakman, strains 410qq, solopathogenic;
10A4 and 17D4, intercompatible, Univ. of Minnesota. 1950.
11427 R.H. Haskins, strain 119, Prairie Regional Lab., Saskatoon,
Canada. 1953. Production of ustilagic acid.

Ustilago sphaerogena Burrill

12421 P.J. Allen, strain 50-315, Univ. of Wisconsin. 1956. Mono-
sporidial strain.

Ustulina vulgaris Fries

8742 J.A. Stevenson, strain 71499, USDA. 1942.

Venturia cerasi Aderhold

12119 (*Fusicladium cerasi*) CBS. 1955.

Venturia inaequalis (Cooke) Aderhold

11096 W.F. Jeffers, Univ. of Maryland. 1951.

Verticillium albo-atrum Reinke and Berthold

10933 O.S. Cannon, Utah Agric. Expt. Sta., Logan. 1950. From
tomato wilt.

12127 J.R. Leclercq, Coulommiers, France. 1955. From alfalfa
wilt.

Verticillium cinnabarinum (Corda) Reinke and Berthold (= *Nectria inventa* Pethybridge)

12267 (*V. lateritium*) L.W. Durrell, Colorado A. and M. Coll.,
Fort Collins. 1955.

Verticillium dahliae Klebahn

7611 F.A. Weiss, strain 837, USDA. 1939. From dahlia wilt.

11405 and 11406 R. Nelson, strains 32 and 76, Michigan State Coll.
1952. From peppermint wilt.

Verticillium sp.

11342 W.F. Jeffers, Univ. of Maryland. 1952. T.E. Ayers, USDA.
From cultivated mushroom.

Volutella buxi (Fries) Berkeley and Broome

10933 W.F. Jeffers, Univ. of Maryland. 1951.

Xylaria hypoxylon Linnaeus ex Greville

9554 E.S. Luttrell, strain 61, Georgia Agric. Expt. Sta. 1944.
Ascospore isolate from red apple.

Zygomansula californica: See *Hansenula californica*

Zygomichia chevalieri: See *Pichia membranaefaciens*

Zygomichia farinosa: See *Pichia farinosa*

Zygorhynchus dangeardi: See *Z. vuilleminii*

Zygorhynchus exponens Burgeff

6835 A.F. Blakeslee, strain C972, CIW. 1938.

Zygorhynchus heterogamus Vuillemin

6743 J.E. Machacek, Canada Dept. Agric., Winnipeg, 1938.

Zygorhynchus moelleri Vuillemin

1208 A.F. Blakeslee, strain C1004, CIW. 1938.

Zygorhynchus vuilleminii Namyslowski

6744 J.E. Machacek, Canada Dept. Agric., Winnipeg, 1938.

6838 A.F. Blakeslee, strain C1005, CIW. 1938.

7939 (Z. dangardi) V.M. Cutter, Jr., strain 63, Cornell Univ. 1941.

Zygosaccharomyces: See Saccharomyces for ascosporous forms,
Torulopsis for others.

ALGAE AND PROTOZOA

Anabaena catenula (Kützing) Bornet and Flahault

11864 R.C. Starr, strain B 375, Univ. of Indiana. 1953.

Anabaena variabilis Kützing

11865 R.C. Starr, strain B 377, Univ. of Indiana. 1953.

Ankistrodesmus braunii (Naegeli) Collins

11476 R.W. Krauss, strain Pringsheim 202-3, Univ. of Maryland. 1956.

Chlorella ellipsoidea Gerneck

11466 R.W. Krauss, strain Pringsheim Z-2-1-1 BAD, Univ. of Maryland. 1953.

Chlorella pyatt

11468 R.W. Krauss, strain Pringsheim 211-11h, Univ. of Maryland. 1953.

Chlorella pyrenoidosa Chick

7516 F.E. Allison, strain L-72a, USDA. 1939.

11469 R.W. Krauss, strain Pringsheim 211-8b, Univ. of Maryland. 1953.

Chlorella vulgaris Beijerinck

9765 F.E. Allison, strain L-756a, USDA. 1945.

11467 R.W. Krauss, strain Pringsheim Z-2-4-1 BAD, Univ. of Maryland. 1953.

Coccomyxa simplex Mainz

11471 and 11472 R.W. Krauss, strains Pringsheim Z-3-1-1 BAD and 216-9a, Univ. of Maryland. 1953.

Crithidia fasciculata Leger

11745 (Herpetomonas culicidarum) Helene A. Nathan, Haskins Lab., New York, N.Y. Anopheles strain. Ann. N.Y. Acad. Sci., 1953, 56, 972.

Euglena gracilis Klebs12716 S.H. Hutner, strain Z, Haskins Lab., New York, N.Y. 1957. Assay of vitamin B₁₂.

ALGAE AND PROTOZOA

Euglena gracilis Klebs var. bacillaris Pringsheim

10616 L. Provasoli and S.H. Hutner, Haskins Lab., New York, N.Y. 1949. Assay of vitamin B₁₂. Proc. Soc. Exptl. Biol. and Med., 1948, 69, 279.

Gyorfiana humicola Kol

11473 R.W. Krauss, strain Pringsheim Z-5-1-1 BAD. Univ. of Maryland. 1953.

Lampropedia hyalina (Ehrenberg) Schroeter

11041 E.G. Pringsheim, Cambridge Univ. 1951.

Mesotaenium caldarium (Lagerheim) Hansgirg

11475 R.W. Krauss, strain Pringsheim Z-8-1-1 BAD, Univ. of Maryland. 1953.

Ochromonas malhamensis Pringsheim

11532 S.H. Hutner, Haskins Lab., New York, N.Y. 1953. Assay of vitamin B₁₂.

Pleurochloris commutata Vischer

11474 R.W. Krauss, Pringsheim strain 860-1, Univ. of Maryland. 1953.

Poteriochromonas stipitata Scherffel

11531 S.H. Hutner, Haskins Lab., New York. 1953. R.A. Lewin, Maritime Res. Lab., Nova Scotia. Assay of cobalimin and thiamine.

Scenedesmus basiliensis Vischer

11461 R.W. Krauss, strain Pringsheim Z-14-1-1 BAD, Univ. of Maryland. 1953.

Scenedesmus bijugatus (Turpin) Kützing

11462 R.W. Krauss, strain Pringsheim Z-14-2-1 BAD. 1953.

Scenedesmus naegelii Chodat

11463 R.W. Krauss, strain Pringsheim 276-2. 1953.

Scenedesmus obliquus (Turpin) Kützing

11457 and 11458 R.W. Krauss, strains Pringsheim 276-3A and WHSO. 1953.

11477 R.W. Krauss, strain Fager D-3 PB 6A. 1953.

Scenedesmus quadricauda (Turpin) Brébisson

11459 and 11460 R.W. Krauss, strains Pringsheim 276-4a and 276-4b. 1953.

Scenedesmus spp.

11464 and 11465 R.W. Krauss, strains Pringsheim A-14-4-1 BAD and Z-14-3-1 BAD. 1953.

Tetrahymena pyriformis (Ehrenberg) Lwoff

9357 and 10542 M.S. Dunn, strains H and W, Univ. of California, Los Angeles. 1948.

12317 S.H. Hutner, strain S, Haskins Lab., New York, N.Y. 1955.

USES

A. ORGANISMS FOR ASSAY

ORGANISMS FOR ASSAY*

1. Amino Acids *

- (1) J. Biol. Chem., 1949, 177, 545.
- (2) J. Biol. Chem., 1948, 174, 1027.
- (3) J. Bact., 1944, 48, 401.
- (4) J. Biol. Chem., 1945, 160, 35
- (5) J. Biol. Chem., 1945, 157, 141.
- (6) J. Biol. Chem., 1945, 157, 265.
- (7) J. Biol. Chem., 1947, 168, 51.
- (8) J. Biol. Chem., 1949, 177, 533.
- (9) J. Biol. Chem., 1944, 156, 715.
- (10) Proc. Soc. Exptl. Biol. Med., 1946, 61, 158
- (11) J. Amer. Chem. Soc., 1945, 67, 196.
* Adapted in part from Anal. Chem., 1958, 30, 849
** See also, under 2: Production, Decarboxylases, for assay

USES

2. Antibiotics Assay (1, 2)

Actithiazic acid

Mycobacterium smegmatis 607

Anisomycin

Saccharomyces cerevisiae 9763 (PCI M50)

Aureomycin, see *Chlortetracycline*

Bacitracin

Micrococcus flavus 10240 (PCI 1216)

Sarcina subflava 7468 (PCI 1009)

Staphylococcus aureus 10537 (PCI 1203)

Streptococcus pyogenes 8668, 9342 (PCI 1311)

Carbomycin (Magnamycin)

Bacillus subtilis 6633

Streptococcus pyogenes 8668

Chloramphenicol

Sarcina lutea 9341 (PCI 1101)

Shigella sonnei 11060

Chloromycetin, see *Chloramphenicol*

Chlortetracycline

Bacillus cereus 10702, 11778 (PCI 213)

Bacillus subtilis 6633 (PCI 219)

Sarcina lutea 9341 (PCI 1001)

Staphylococcus aureus 6538P (PCI 1209)

Streptococcus pyogenes 8668

Cycloheximide (Acti-dione)

Saccharomyces cereviseae 2366

Saccharomyces fragilis 8635

Erythromycin

Bacillus subtilis 6633

Staphylococcus aureus 6538P

Streptococcus pyogenes 8668

Neomycin

Staphylococcus aureus 6538P, 6538DR, 12228

Escherichia coli 9637

Novobiocin (Cathomycin)

Bacillus subtilis 12432

Oleandomycin

Sarcina lutea 9341 (PCI 1001)

Staphylococcus aureus 12228 (PCI 1200)

Oxytetracycline

Bacillus cereus 11778 (PCI 213)

Klebsiella pneumoniae 10031 (PCI 602)

Staphylococcus aureus 6538P (PCI 1209)

Streptococcus pyogenes 8668

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Puromycin (Achromycin)

Bacillus cereus 11778 (PCI 213)

Penicillin

Escherichia coli 9637

Bacillus subtilis 9466, 9524

Sarcina lutea 9341 (PCI 1001)

Staphylococcus aureus 6538P, 9801, 11522, 12692, 12715 (PCI 1209/T)

Streptococcus pyogenes 8668

Pleocidin

Proteus vulgaris 7829

Polymyxin (Aerosporin)

Bordetella bronchiseptica 4617, 12714 (PCI 1701/O)

Escherichia coli 10536 (PCI 540)

Klebsiella pneumoniae 10031 (PCI 602)

Streptomycin

Alcaligenes sp. 10153

Bacillus circulans 9966

Bacillus megaterium 9885

Bacillus subtilis 6633, 9524

Escherichia coli 9637

Klebsiella pneumoniae 9997, 10031 (PCI 602)

Serratia marcescens 9986

Staphylococcus aureus 6538P, 9996

Streptothricin

Alcaligenes sp. 10153

Bacillus subtilis 9466, 9524

Escherichia coli 9637

Klebsiella pneumoniae 9997

Subtilin

Arthrobacter citreus 11624

Terramycin, see Oxytetracycline

Tyrothricin

Streptococcus faecalis 10541 (PCI 1341)

Streptococcus sp. 9854

Viomycin (Viocin)

Bacillus subtilis 6633, 11838

Klebsiella pneumoniae 10031 (PCI 602)

Mycobacterium phlei 356

Mycobacterium smegmatis 362

PCI = Penicillin Control and Immunology, U.S. Food and Drug Administration.

(1) Kersey, Roger C. and Fink, Frederick C. 1954. In "Methods of Biochemical Analysis" (David Glick, editor), Vol. 1, pp. 53-79. Interscience Publishers, Inc., New York, N.Y.

(2) Grove, D.C. and Randall, W.A. 1955. Assay Methods of Antibiotics. A laboratory manual. Medical Encyclopedia, Inc., New York, N.Y.

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3. Vitamin Assay

p-Aminobenzoic acid

- Acetobacter suboxydans 621 (1)
- Clostridium acetobutylicum 824 (1)
- Lactobacillus plantarum 10012
- Lactobacillus plantarum (L. arabinosus 17-5) 8014 (1)
- Neurospora crassa 9278

Biotin

- Ashbya gossypii 8717
- Lactobacillus casei 7469 (1)
- Lactobacillus plantarum (L. arabinosus 17-5) 8014 (1)
- Micrococcus sodonensis 11880 (2)
- Neurospora crassa 9277 (1)
- Rhizobium trifolii 10140 (1)
- Saccharomyces cerevisiae 7754 (1)
- Saccharomyces cerevisiae var. ellipsoideus 9896

Choline

- Diplococcus pneumoniae 6303 (3)
- Neurospora crassa 9277 (1)

Folic acid

- Bacillus coagulans 12245 (4)
- Lactobacillus casei 7469 (5)
- Streptococcus faecalis 8043 (5)

Inositol

- Ashbya gossypii 8717
- Neurospora crassa 9683 (1)
- Saccharomyces carlsbergensis 9080 (1)
- Saccharomyces cerevisiae 7752

Nicotinic acid (niacin)

- Acetobacter suboxydans 621 (6)
- Candida pseudotropicalis 2512 (1)
- Lactobacillus casei 7469
- Lactobacillus plantarum (L. arabinosus 17-5) 8014 (1)
- Leuconostoc mesenteroides 9135 (1)

Pantothenic acid

- Acetobacter suboxydans 621
- Lactobacillus casei 7469 (1)
- Lactobacillus plantarum (L. arabinosus 17-5) 8014 (1)
- Proteus morganii 8019 (1)
- Saccharomyces carlsbergensis 9080 (1)
- Saccharomyces cerevisiae 7752

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Riboflavin

Lactobacillus bulgaricus 7993 (1)
Lactobacillus casei 7469 (1)
Streptococcus sp. 10100 (1)

Thiamine

Ashbya gossypii 8717
Ceratocystis fimbriata 10804 (7)
Lactobacillus fermenti 9338 (1)
Leuconostoc mesenteroides 9135 (8)
Neurospora crassa 10333
Saccharomyces cerevisiae var. *ellipsoideus* 7753 (1)
Streptococcus salivarius 9222 (1)

Vitamin B₆

Escherichia coli 12651
Pyridoxal
 Lactobacillus casei 7469 (1)
 Lactobacillus delbrueckii 9649
Pyridoxal and pyridoxamine
 Streptococcus faecalis 8043 (*S. lactis* R) (1)
Pyridoxal, pyridoxamine and pyridoxine
 Neurospora sitophila 9276 (1)
 Saccharomyces carlsbergensis 9080 (1)
 Saccharomyces cerevisiae 7752 (1)

Vitamin B₁₂

Arthrobacter sp., *Lochhead* 38, 12834 (11)
Escherichia coli 10586
Euglena gracilis 12716
Lactobacillus lactis 8000, 10697, 10705
Lactobacillus leichmannii 4797, 7830 (9)
Ochromonas malhamensis 11532 (10)

(1) "Vitamin Methods," (Paul György, editor), Vol. 1, Academic Press, New York. 1950.

(2) J. Bact., 1955, 69, 67.

(3) J. Bact., 1944, 47, 509.

(4) Proc. Soc. Exptl. Biol. Med., 1955, 89, 210.

(5) Jukes, Thomas H. 1955. In "Methods of Biochemical Analysis" (David Glick, editor), Vol. 2, pp. 121-151. Interscience Publishers, Inc., New York.

(6) Arch. Biochem., 1944, 4, 211.

(7) Mycologia, 1952, 39, 699.

(8) J. Bact., 1943, 46, 441.

(9) U. S. Pharmacopeia XIV, 3rd Supp., 1952, p. 17; 4th Supp., 1954, p. 12.

(10) Brit. J. Nutr., 1953, 7, 299.

(11) Canadian J. Microbiol., 1957, 3, 329.

USES

4. Miscellaneous Determinations

Adenine

Neurospora crassa 11063 (1)

Citrovorum factor (Folinic acid)

Pediococcus cerevisiae 8081 (2)

Coenzyme A: see phosphotransacetylase production (p. 177)

Cytidine

Neurospora crassa 11993 (3)

Cytosine

Lactobacillus brevis 8287 (4)

Desoxyribosides

Lactobacillus acidophilus 4963, 11506 (5, 6)

Formic acid

Clostridium cylindrosporum 7905

Inorganic ions (7)

Minerals in soils

Copper, Molybdenum, Magnesium and Zinc

Aspergillus niger 6275, 10581

Potassium

Aspergillus niger 6277 (8)

Lactobacillus casei 7469 (9)

Manganese in biological materials

Bacillus subtilis 6633 (10)

Nitrate

Bacillus sp. 12480

Orotic acid

Lactobacillus bulgaricus 10812

Panthenol

Acetobacter suboxydans 621H (11)

Pantethine

Lactobacillus bifidus var. *pennsylvanicus* 11863 (12)

Lactobacillus helveticus 12046

Thioctic acid

Streptococcus faecalis 11700 (manometric)

Thymidine

Lactobacillus leichmannii 7830

Lactobacillus lactis 8000

Leuconostoc mesenteroides 8293

Thymine (13)

Escherichia coli 9723h

Lactobacillus sp. 335 (4)

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Uracil

Lactobacillus brevis 8287 (4)
Lactobacillus sp. 335 (4)

Uridine

Neurospora crassa 11993 (3)

Xylose

Hansenula suaveolens 9847

-
- (1) J. Biol. Chem., 1949, 177, 451.
 - (2) Methods of Biochemical Analysis, Vol. 2. Interscience Pub., New York. 1955.
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B. ORGANISMS FOR PRODUCTION

1. Antibiotic Production

Actinomycin - Streptomyces antibioticus 8663
Alternaria acid - Alternaria solani 11078
Anisomycin - Streptomyces griseolus 11796
Antimycin A - Streptomyces sp. 11862
Aspergillic acid - Aspergillus flavus 9170
Aureomycin - Streptomyces aureofaciens 10762

Bacillomycin B - Bacillus subtilis 10774
Bacitracin - Bacillus licheniformis 10716

Cephalosporin - Cephalosporium sp. 11550
Chaetomin - Chaetomium cochlioides 10195
Chloromycetin - Streptomyces venezuelae 10595, 10712
Citrinin - Penicillium citrinum 8506
Clavacin - Aspergillus clavatus 9192, 9598

Diplococcin - Streptococcus sp. 10035

USES

Amylase (bacterial)

Bacillus macerans 8516, 8517

Bacillus polymyxa 8523

Bacillus stearothermophilus 7954 (3)

Amylase (fungal) (4)

Aspergillus niger 10254

Aspergillus oryzae 9102, 10196, 11601

Endomycopsis fibuliger 2082, 9947

Ascorbic acid

Escherichia sp. 9492

Staphylococcus aureus 9491 (conversion of dehydroascorbic acid)

Butyl alcohol: see under acetone

2, 3 Butylene glycol

Bacillus polymyxa 12321

β -Carotene

Choanephora cucurbitarum 12997 (+), 12998 (-)

Citric acid

Aspergillus niger 1015, 6276, 9142, 10577, 11414

Citrulline from arginine

Streptococcus faecalis 11420

Collagenase

Clostridium histolyticum 8034

Decarboxylases, for assay of (5)

Aspartic acid

Clostridium perfringens 8009 (NCTC 6784)

Arginine

Escherichia coli 10787 (NCTC 7020)

Glutamic acid

Clostridium perfringens 8009 (NCTC 6784)

Escherichia coli 4157, 11246 (6)

Diaminopimelic acid

Escherichia coli 9637

Histidine

Clostridium perfringens 10873 (NCTC 6785)

Lysine

Bacterium cadaveris 9760 (NCTC 6578)

Tyrosine

Streptococcus faecalis 8043, 11420 (NCTC 6782)

Desoxyribonuclease

Streptococcus sp. 10706

Dextrans (7)

Leuconostoc mesenteroides 10830a, 11449

Ergosterol

Penicillium chrysogenum 10002

Saccharomyces carlsbergensis 2345

USES

Ethyl alcohol

Absidia sp. 10239

Saccharomyces cerevisiae 4109, 4132, 9763

Saccharomyces sp. 765

Fibrinolysin

Streptococcus pyogenes 12380

Folinic acid from folic acid

Lactobacillus casei 7469 (8)

β -Galactosidase

\sim *Escherichia coli* 9637

Gibberellic acid

Gibberella fujikuroi 12616, 12617, 12618

Gluconic acid

Aspergillus niger 8740, 9029 (9)

Penicillium chrysogenum 10107

d -Glutamic acid

$\underline{-}$ *Bacillus licheniformis* 9945 (10)

Histamine from histidine

Escherichia coli 8329, 8330

Hyaluronidase

Streptococcus pyogenes 10402, 10403

Streptococcus sp. 12747

Itaconic acid

Aspergillus itaconicus 10021

Aspergillus terreus 10020, 10029

5-Ketogluconic and the 2-keto acid (11)

Acetobacter gluconicum 9324

Acetobacter kuetzingianus 6439

Acetobacter suboxydans 621

Kojic acid

Aspergillus flavus 10124

Aspergillus oryzae 7252

d -Lactic acid

Bacillus coagulans 10545

Lactobacillus casei 7469, 9595

l -Lactic acid

Lactobacillus bulgaricus 11842

Lactobacillus delbrueckii 9649, 11443

Maltase

Aspergillus niger 10864

d -Methionine from l -methionine

$\underline{-}$ *Streptococcus faecalis* 9790 (12)

USES

Penicillinase

Bacillus cereus 10876

Bacillus subtilis 9799

Phosphotransacetylase for Coenzyme A assay

Clostridium kluyveri 12489 (13)

Receptor-destroying enzyme for human erythrocytes

Vibrio comma 11623

Riboflavin

Ashbya gossypii 8717, 10895

Bacillus megaterium 10778

Candida guilliermondii 9058

Candida krusei 749

Eremothecium ashbyii 6747

Torulopsis candida 10539

Yeast sp. 9951

1-Sorbose from d-sorbitol

Acetobacter suboxydans 621

Steroids, transformation of (14)

Aspergillus niger 11394 (15)

Bacillus megaterium 10778 (16)

Botrytis cinerea 12481 (17)

Botrytis paeoniae 12482 (17)

Cunninghamella blakesleeana 8688a (18)

Curvularia lunata 12017 (19)

Rhizopus arrhizus 11145 (20)

Rhizopus nigricans 6227b (20)

Streptomyces fradiae 10745

Trichothecium roseum 8685

Streptokinase: see Fibrinolysin

Streptolysin "O"

Streptococcus pyogenes 10389, 12383

Streptolysin "S"

Streptococcus pyogenes 8668

Thiaminase

Bacillus thiaminolyticus 11376

Tyrosinase

Streptomyces phaeochromogenus 3338

Urease

Bacillus pasteurii 6452, 11859

Brevibacterium ammoniagenes 6871

Proteus vulgaris 8427

Vi antigen

Escherichia coli 10053

USES

Vitamin B₁₂

Bacillus megaterium 10778 (21)
Flavobacterium devorans 10829
Propionibacterium freudenreichii 6207 (22)
Streptomyces griseus 3478
Streptomyces sp. 11009, 11071, 11071a

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C. MISCELLANEOUS USES

Antibiotic resistant strains

Dihydrostreptomycin

Micrococcus flavus 10240a (PCI 1216/D)

Sarcina lutea 9341a (PCI 1001/D)

Staphylococcus aureus 6538DR (PCI 1209/D)

Oxytetracycline

Bordetella bronchiseptica 12714 (PCI 1701/O)

Tetracycline group

Staphylococcus aureus 12715 (PCI 1209/T)

Novobiocin

Staphylococcus aureus 12692 (PCI 1209/N)

Antigen preparation

Brucella abortus 11192

USES

Arsenicals detection

Scopulariopsis brevicaulis 7903 (1)

Bacterial spectrum of antibiotics

Mycobacterium phlei 10142

Cellulolytic strain

Streptomyces sp. 11238 (2)

Fungicide tests

Alternaria brassicicola 12251

Sclerotinia fructicola 9962

Stemphylium sarciniforme 10828

Trichophyton mentagrophytes 9533

Fungistatic antibiotics assessment

Botrytis allii 9435

Germicide tests

Candida albicans 10231

Escherichia coli 11229

Salmonella typhosa 6539

Lactic starters

for buttermilk, cheese, etc. 10385

for Swiss cheese "Ga" 9223

Lipolytic strains

Achromobacter lipolyticum 11367

Candida lipolytica 8661, 8662

Luminescence demonstration

Photobacterium fischeri 7744

Lysozyme test strain

Micrococcus lysodeikticus 4698

Mildew-proofing tests

Aspergillus clavatus 1007 (3)

Aspergillus flavus 1003, 9643, 9807 (4, 5)

Aspergillus fumigatus 1028

Aspergillus niger 6275, 6277, 9642, 10535, 10575 (4, 5)

Aspergillus oryzae 10196 (6)

Aspergillus tamarii 10836 (7)

Aspergillus terreus 10690 (7)

Aspergillus ustus 10760

Chaetomium globosum 6205 (7)

Fusarium oxysporum 659

Memnoniella echinata 9597, 11973 (3, 7)

Myrothecium verrucaria 9095 (7)

Penicillium citrinum 9849 (7)

Penicillium commune 10428 (3)

Penicillium funiculosum 9644 (7)

Penicillium ochro-chloron 9112 (7)

Penicillium vermiculatum 9776 (7)

USES

Mildew-proofing tests (Continued)

Rhizopus nigricans 10404 (7)

Stachybotrys atra 9182

Stemphylium sp. 9569

Trichoderma sp. 9645 (5)

Opsono-cytophagic testing

Brucella abortus 9539

Phenol coefficient tests

Candida albicans 10231

Clostridium novyi 3540

Salmonella typhosa 6539

Staphylococcus aureus 6538

Protein digestion coefficients

Pseudomonas aeruginosa 10145 (8)

Proteolytic strains: also see production of amylase (bacterial)

Aspergillus flavus 9376

Aspergillus oryzae 9362, 11866

Bacillus subtilis 9943

Pyrogen preparation

Pseudomonas spp. 9229, 9230

Sterility test strains

Bacillus subtilis 9466

Candida albicans 10231

Clostridium novyi 3540

Clostridium sporogenes 7955

Diphtheroid 12458, 12560

Escherichia coli 8739, 11229

Gram-positive coccus 12457, 12459

Streptococcus typing cultures: see *Streptococcus pyogenes*, desired type

Streptococcus grouping cultures: see *Streptococcus pyogenes* and

Streptococcus spp., desired group

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